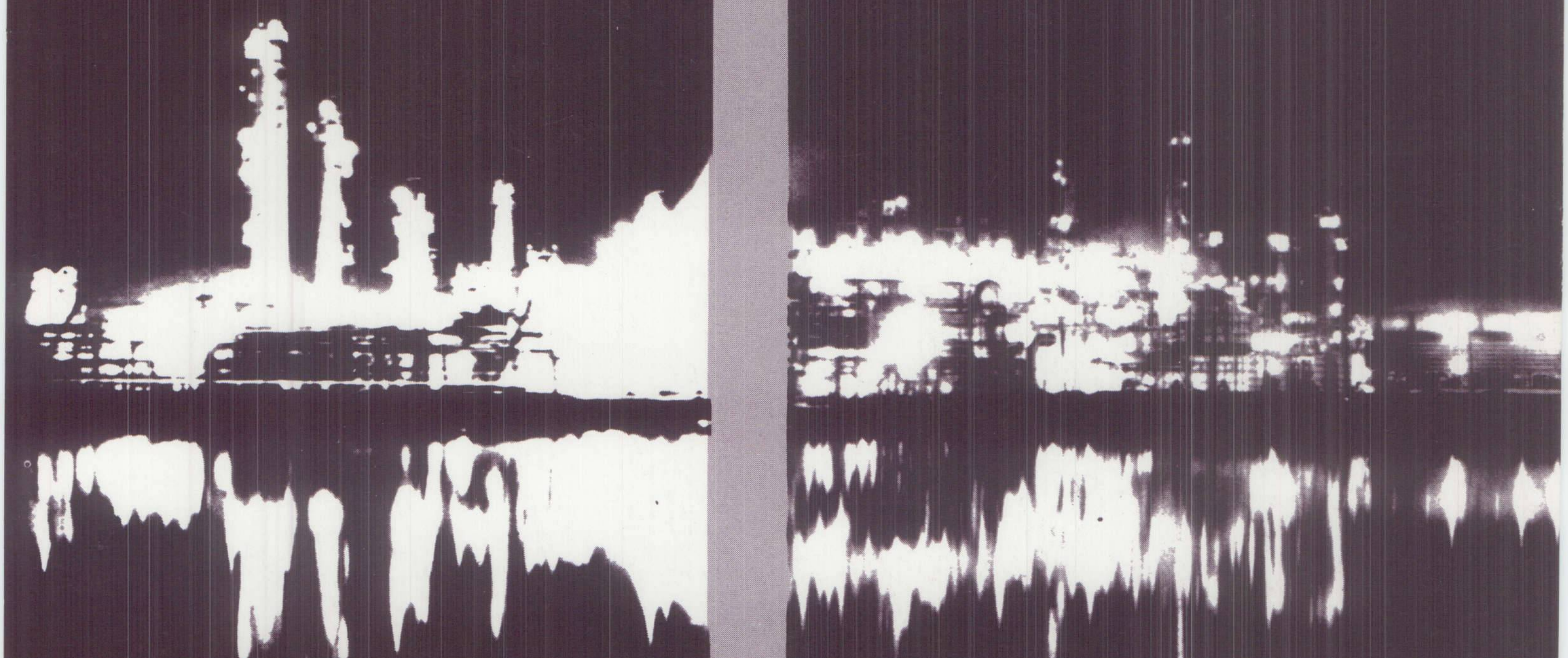
DOE/EIA-0466(88)

Profiles of Foreign Direct Investment in U.S. Energy 1988



EIA

Energy Information Administration

Contacts

Profiles of Foreign Direct Investment in U.S. Energy 1988 was prepared in the Macro and Financial Information Branch, Economics and Statistics Division, Office of Energy Markets and End Use, Energy Information Administration, U.S. Department of Energy, under the direction of Arthur T. Andersen (202) 586-1441 and Mary E. Northup (202) 586-1445.

Specific information concerning the preparation of this document may be obtained from Jon A. Rasmussen (202) 586-1449.

This publication is available from the Superintendent of Documents, U. S. Government Printing Office (GPO). Information about purchasing this or other Energy Information Administration (EIA) publications may be obtained from the GPO or the EIA's National Energy Information Center (NEIC). Questions on energy statistics should be directed to the NEIC by mail, telephone or, telecommunications device for the deaf (TDD). Addresses, telephone numbers, and hours appear below:

National Energy Information Center, EI-231
Energy Information Administration
Forrestal Building, Room 1F-048
Washington, DC 20585
(202) 586-8800
Telecommunications Device for the Deaf Only:
(202) 586-1181
Hours: 8 a. m. - 5 p. m., M-F, Eastern Time

Superintendent of Documents
U. S. Government Printing Office
Washington, DC 20402
(202) 783-3238

Released for printing December 18, 1989

DOE/EIA-0466(88)
Distribution Category UC-98

Profiles of Foreign Direct Investment in U.S. Energy 1988

Energy Information Administration
Office of Energy Markets and End Use
U.S. Department of Energy
Washington, DC 20585

Preface

In accordance with Section 657, Subpart 8, of the U.S. Department of Energy Organization Act, the Energy Information Administration (EIA) prepares an annual report for the Secretary of Energy and for transmittal to Congress. This report summarizes the activities in the United States by foreign-affiliated companies that own or control U.S. energy sources and supplies.

This report presents the following profiles for 1988:

- Foreign direct investment in U.S. petroleum, including natural gas.
- The energy production, processing, distribution, and reserves of foreign-affiliated companies.
- The financial performance and investment activity of foreign-affiliated energy companies.
- Overseas oil and gas operations of U.S. companies.
- Comparisons of foreign-affiliated companies with U.S. energy companies.

The information is intended for use by the Congress, Government agencies, energy industry analysts, international trade and finance analysts, and the general public.

Contents

	Page
Executive Summary	ix
1. Introduction	1
2. Foreign Direct Investment in U.S. Petroleum and Coal	3
Foreign Direct Investment and Rates of Return in U.S. Petroleum	3
Sources of Foreign Direct Investment in U.S. Petroleum	8
Foreign Direct Investment and Rates of Return in U.S. Coal	10
3. The Role of Foreign-Affiliated Companies in U.S. Energy Operations	13
Oil and Gas Reserves and Production	13
Refining and Gasoline Marketing	13
Coal Production	19
Uranium Exploration and Development	19
4. Financial Profiles and Transactions of Foreign-Affiliated U.S. Energy Companies	23
Profit and Investment Trends	23
Foreign Direct Investment Transactions in U.S. Energy Markets	25
Appendix	
Completed Foreign Direct Investment Transactions, 1988	29

Tables

Page

1. Foreign Direct Investment in U.S. Petroleum and U.S. Direct Investment in Foreign Petroleum, 1980-1988 4

2. Geographic Sources of Foreign Direct Investment in U.S. Petroleum, 1984-1988 9

3. Additions to Foreign Direct Investment in U.S. Petroleum, 1977-1988 10

4. Distributed and Reinvested Earnings for Foreign Direct Investment in U.S. Petroleum, 1981-1988 10

5. Foreign Direct Investment, Additions to Foreign Direct Investment, and Rate of Return on Foreign Direct Investment in U.S. Coal, 1981-1988 11

6. Domestic Oil and Dry Natural Gas Proved Reserves and Production for Foreign-Affiliated U.S. Companies, 1987 and 1988 14

7. Foreign Crude Oil and Natural Gas Liquids Reserve Interest for FRS Companies, 1988 and Percent Change from 1987 15

8. Net Production of Petroleum and Dry Natural Gas in the United States by Foreign-Affiliated U.S. Companies, 1986-1988 16

9. U. S. Refinery Operations of Foreign-Affiliated U.S. Companies, 1984-1988 17

10. Branded Retail Outlets and Total Gasoline Supplied by Foreign-Affiliated U.S. Companies, 1984-1988 18

11. Foreign Refinery Output and Capacity Statistics for FRS Companies and Foreign Industry, 1986 and 1987 19

12. Bituminous Coal and Lignite Production and Source of Ownership of Foreign-Affiliated Coal Companies in the United States, 1985-1988 20

13. Foreign Participation in U. S. Uranium Exploration and Development, 1976-1988 21

14. Annual Change in Net Income and Return on Stockholders' Equity, 1986-1988 24

15. Selected Financial Information for Foreign-Affiliated U.S. Energy Companies, 1987 and 1988 25

16. Distribution of the Value of Foreign Direct Investment Transactions by Industry, 1981-1988 26

17. Distribution of the Value of Foreign Direct Investment Transactions by Type of Transaction, 1981-1988 27

Appendix Tables

Page

A1. Completed Transactions by Size in the Petroleum Industry from January 1988 through December 1988 31

A2. Completed Transactions by Size in the Coal Industry from January 1988 through December 1988 35

A3. Completed Transactions by Size in Other Energy Industries from January 1988 through December 1988 35

Figures

1. Additions to Foreign Direct Investment in U.S. Petroleum and U.S. Direct Investment in Foreign Petroleum, 1978-1988 4

2. Rates of Return on Foreign Direct Investment in the United States, 1978-1988 7

3. Sources of Foreign Direct Investment in U.S. Petroleum by Geographic Area, 1980-1988 8

4. Production and Share of U.S. Total Bituminous Coal and Lignite for Foreign-Affiliated U.S. Companies, 1980-1988 22

5. Return on Equity for Foreign-Affiliated U.S. Energy Companies, Other Energy Companies, and All U.S. Manufacturing Corporations, 1980-1988 24

Executive Summary

Profiles of Foreign Direct Investment in U.S. Energy 1988 describes the role of foreign ownership in U.S. energy enterprises, with respect to investment, energy operations, and financial performance. Data are utilized from the Energy Information Administration (EIA), U.S. Department of Commerce, company annual reports, and public disclosures of investment transactions.

Of the approximately 80 companies profiled, the major foreign-affiliated U.S. companies identified by the EIA are Shell Oil Company, BP America (formerly Standard Oil Company), E.I. du Pont de Nemours and Company, and American Petrofina. Foreign ownership ranges from 23 percent of Du Pont to 100 percent of Shell Oil and BP America.

Highlights of this report are given below:

- For the United States as a whole, additions to foreign direct investment (FDI)[1] rose from \$51.4 billion in 1987 to \$57.1 billion in 1988. The growth in FDI primarily reflected the large number and size of acquisitions of U.S. companies financed from abroad. Seven acquisitions, mainly in manufacturing, exceeded \$1 billion in value. Investors in the United Kingdom and Japan accounted for the bulk of the increase in overall FDI. The petroleum industry's share of FDI fell to 11 percent in 1988, down from 13 percent in 1987, the lowest level since at least 1974.

- Excluding the effect on FDI of British Petroleum's acquisition of Standard Oil, additions to FDI in U.S. petroleum rose from \$0.9 billion in 1987 to \$1.5 billion in 1988. However, the British Petroleum transaction involved a capital inflow of \$5.6 billion in 1987 and an outflow of \$2.4 billion in 1988. On balance, the FDI position in U.S. petroleum declined by \$0.9 billion to \$34.7 billion in 1988 due to the British Petroleum transaction. This was the first decline in the FDI position in U.S. petroleum since 1976.

- Refining and marketing assets were the primary targets in the U.S. energy industry for foreign investors in 1988. The sources of increased foreign investor interest in U.S. refining and marketing were a continued recovery in U.S. refining and marketing profitability from very low levels in the mid-1980s and the move by Saudi Arabia toward vertical integration.

- In 1988, foreign affiliated companies' share of U.S. crude distillation refining capacity increased to 27 percent from 21 percent in 1987. The largest transactions involving acquisitions of U.S. refining capacity included:

  - Formation of Star Enterprise, a 50-50 joint venture between Saudi Arabia and Texaco, for \$812 million. The joint venture included three of Texaco's refineries with a total crude distillation capacity of 615 thousand barrels per day, 50 product distribution terminals, and 12,400 Texaco branded stations.

  - Horsham Corporation of Toronto, through its ADC Acquisition Corporation, purchased Clark Oil and Refining Company for \$650 million. The transaction included two refineries with a total capacity of 125 thousand barrels per day.

  - Ultramar, a U.K. company, paid \$440 million to Union Pacific for its California refinery (65 thousand barrels per day capacity).

  - BP America purchased Mobil's Washington refinery (79 thousand barrels per day capacity) for \$153 million.

- Foreign investor interest in U.S. oil and gas production evidenced a mixed pattern of acquisitions and divestitures in 1988.

The largest acquisitions included:

  - Total Minatome's acquisition of CSX Oil and Gas Corporation for \$612 million.

  - American Petrofina's purchase of Tenneco's U.S. onshore oil and gas properties located in the Southwest and Gulf States regions for \$600 million.

  - Olympia and York Ltd. acquired a 19-percent equity interest in Santa Fe Southern Pacific Corporation for \$236 million. Although the latter company is primarily in transportation opera-

[1] Foreign direct investment (FDI) is the cumulative net flow of funds between a foreign-affiliated company and its foreign owners. The U.S. Department of Commerce, the agency that collects data on FDI, measures FDI as the book value of foreign direct investors' equity in and net outstanding loans to their U.S. affiliates. The Department of Commerce defines a U.S. affiliate as a U.S. business enterprise in which one foreign direct investor owns 10 percent or more of the voting securities or the equivalent.

tions, it has significant production of oil, gas, and coal in the United States.

- Gulf Canada Resources' acquisition of Home Petroleum Corporation for $191 million.
- Caspen Oil, a U.K. company, acquired control of Summit Energy and formed the U.S. subsidiary, Caspen Oil Incorporated, in a complex transaction valued at $149 million.
- Canadian Occidental Petroleum acquired Moore McCormack Energy for $149 million.
- Tejas Gas Corporation, a subsidiary of Hamilton Oil, completed their purchase of Gulf Energy Development Corporation for $140 million.
- Bridge Oil Company, a subsidiary of Bridge Oil Ltd. of Australia, acquired 100 percent interest of Petrus Oil and Gas Limited Partners for $112 million.

Notable divestitures of U.S. oil and gas assets included:

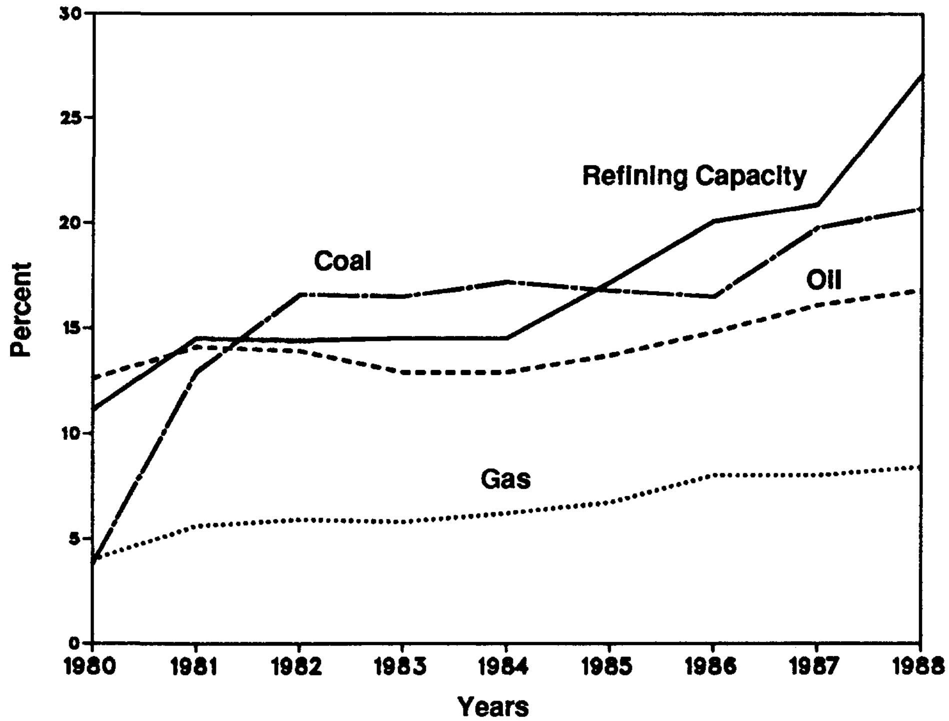
- Newmont Mining sold its U.S. oil and gas interests to Mobil for $170 million.
- Total Petroleum (North America) sold its U.S. oil and gas assets for $152 million.
- TransCanada Pipelines sold the U.S. oil and gas properties of its subsidiary, Wessely Energy Company, to NGC Energy Company, a subsidiary of Pacific Gas and Electric, for $125 million.

The financial performance of energy companies continued to improve from the low levels of 1986 despite a decline in oil prices in 1988. Increased profits from U.S. refining and marketing operations and energy companies' chemical operations accounted for the improvement. Foreign-affiliated energy companies' return on equity rose from 10.3 percent in 1987 to 11.2 percent in 1988. Other energy companies overall registered an increase in return on equity from 5.1 percent to 12.6 percent. The latter companies' greater improvement largely reflected the absence of substantial charges against income for restructuring in 1988.

In 1988, the role of foreign affiliates in U.S. energy operations increased in most areas (Figure ES1):

- Foreign-affiliated companies' share of U.S. crude oil distillation capacity grew from 21 percent in 1987 to 27 percent in 1988. About two-thirds of the increase in foreign affiliates' U.S. refinery capacity was traceable to the formation of Star Enterprise.
- Foreign affiliates' share of U.S. oil and gas production continued to increase in 1988, reaching 17 percent and 8 percent, respectively. In 1988, the increased shares were largely traceable to the addition of Santa Fe Southern Pacific to the foreign affiliates group.
- Higher rates of coal production by foreign-affiliated companies, compared with U.S. industry overall, led to an increase in their share of U.S. coal production from 20 percent in 1987 to 21 percent in 1988.
- Foreign affiliates' share of U.S. uranium exploration and development expenditures fell from 60 percent in 1987 to 44 percent in 1988. Nevertheless, their share remained at the historically high levels evident since 1986.

Figure ES1. Foreign Affiliates' Share of U.S. Production of Oil, Gas, and Coal, and U.S. Refining Capacity, 1980-1988



Source: Tables 8, 9, and 12 of Chapter 3. U.S. Department of Energy, *Annual Report to Congress*, DOE/S-0010(84) (Washington, DC, September 1984). Energy Information Administration, *Profiles of Foreign Direct Investment in U.S. Energy 1983*, DOE/EIA-0466 (Washington, DC, February 1985). Energy Information Administration, *Profiles of Foreign Direct Investment in U.S. Energy 1984*, DOE/EIA-0466(84) (Washington, DC, December 1985). Energy Information Administration, *Profiles of Foreign Direct Investment in U.S. Energy 1985*, DOE/EIA-0466(85) (Washington, DC, January 1987). Energy Information Administration, *Profiles of Foreign Direct Investment in U.S. Energy 1986*, DOE/EIA-0466(86) (Washington, DC, December 1987). Energy Information Administration, *Profiles of Foreign Direct Investment in U.S. Energy 1987*, DOE/EIA-0466(87) (Washington, DC, December 1988).

1. Introduction

According to a Congressional report on foreign investment:[2]

> "The Congress and the public have expressed serious concerns about the impact and effects of foreign investment in the United States. They are concerned about the possibility that, if the assets or the natural resources of large U.S. firms end up under foreign control, those firms could be operated in ways ultimately harmful to U.S. national interests. These concerns arise out of the reports of foreign takeovers of high technology U.S. firms, acquisitions of U.S. farmland, investment in U.S. banks and government securities, and large foreign purchases of U.S. energy and other natural resources with the concomitant export of these scarce resources. Some of these concerns may be unfounded, but it is self-evident that both the Congress and the public must be fully apprised of the impact and effects of foreign investment to make these judgments."

The above concerns extend specifically to involvement of foreign interests in U.S. energy as evidenced by Section 657, Subpart 8, of the U.S. Department of Energy Organization Act (Public Law 95-91). This act requires, *inter alia*, that the Secretary of Energy report to the President for transmittal to Congress:

> "...to the extent practicable, a summary of activities in the United States by companies or persons which are foreign owned or controlled and which own or control United States energy sources and supplies, including the magnitude of annual foreign direct investment in the energy sector in the United States..."

The Energy Information Administration (EIA) annually prepares a report, pursuant to the legislative requirement.[3] Versions of the report, for years prior to the 1983 reporting year, have appeared as Appendix A in the U.S. Department of Energy's *Secretary's Annual Report to Congress*. Beginning with the 1983 reporting year, the annual report on foreign investment and ownership in U.S. energy has been made available by the EIA in published form.

By definition,[4] "a U.S. affiliate is a U.S. business enterprise in which a single foreign direct investor owns at least 10 percent of the voting securities, or the equivalent." It should be noted that holding 10 percent or more of a company's voting stock does not necessarily constitute control of that company. The determination of control is a complex and often subjective process in which many factors other than the percentage of ownership must be considered.

This report reviews the patterns of foreign ownership interest in U.S. energy enterprises, exclusive of portfolio investment. Throughout this report such foreign non-portfolio ownership interests in U.S. energy companies are referred to as "foreign direct investment" (FDI) and the U.S. affiliates in which a foreign entity holds an ownership interest are referred to as "foreign-affiliated" U.S. enterprises or companies.

The report profiles the involvement of foreign-affiliated U.S. companies in the following areas: domestic petroleum production, reserve holdings, refining and marketing activities, coal production, and uranium exploration and development. A financial profile of U.S. energy companies that are foreign-affiliated is presented, comparing 1988 with 1987. For the petroleum industry, the report includes the international composition of ownership, as well as information on the flow of capital and income between the foreign owners and the foreign-affiliated companies. In addition, recent acquisitions of ownership interests in U.S. energy companies by foreign investors are summarized.

[2] U.S. House of Representatives, Committee on Government Operations, *The Adequacy of the Federal Response to Foreign Investment in the United States* (August, 1980), p. 2.

[3] A report on exports of energy, required by the same legislation, is in U.S. Department of Energy, *Annual Report to Congress*, DOE/S-0010(87) (Washington, DC, 1987)

[4] U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business* (Washington, DC, June 1989). Also, it should be noted that, consistent with its definition, FDI activities portrayed throughout this report do *not* include any foreign investment activities in connection with less than 10 percent ownership, which is known as portfolio investment.

2. Foreign Direct Investment in U.S. Petroleum and Coal

The information on foreign direct investment (FDI) in the United States is derived from published data from the U.S. Department of Commerce. The data are obtained from quarterly reports required of foreign-affiliated U.S. enterprises. FDI is the cumulative net flow of funds between a foreign-affiliated company and its foreign owners. These capital flows consist of stock purchases and paid-in capital, retained earnings and other equity, and loans from and to the foreign parents.[5] The change in FDI is not a measure of capital expenditures in the United States by foreign-affiliated U.S. companies. Foreign direct investment is a measure of the net flow of capital between the foreign entities and their U.S. affiliates. It should be emphasized that investment flows out of, as well as into, the United States. As is discussed in the next section, U.S. direct investment in petroleum abroad generally exceeds petroleum FDI in the United States, although the difference has been declining in recent years.

For U.S. Department of Commerce reporting purposes, petroleum consists of crude oil production (including natural gas liquids), natural gas production, oilfield services, integrated refining, marketing, and petroleum transport. Due to the prominence of the major petroleum companies, foreign-affiliated companies classified in integrated petroleum refining accounted for 84 percent of the FDI in U.S. petroleum in 1988. The major foreign-affiliated U.S. petroleum companies identified by the Energy Information Administration (EIA) are Shell Oil Company, BP America, E.I du Pont de Nemours and Company, and American Petrofina. Foreign ownership ranges from 23 percent of Du Pont to 100 percent of BP America and Shell Oil.

Information on the role of foreign-affiliated companies in petroleum and other U.S. energy operations, based on EIA and other data sources, is presented in Chapter 3.

Foreign Direct Investment and Rates of Return in U.S. Petroleum

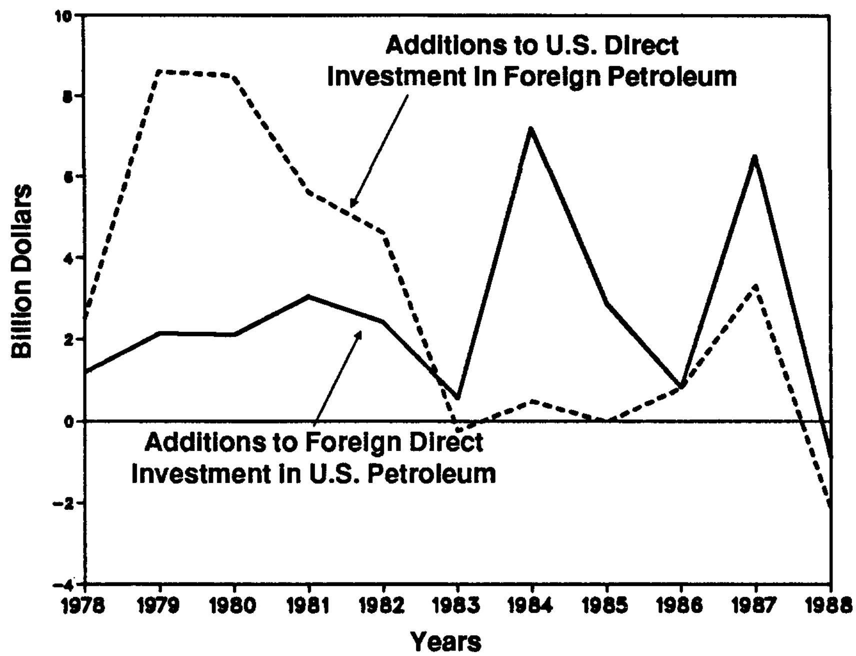
The value of FDI in U.S. petroleum decreased by $0.9 billion in 1988, the first decrease since 1976 (Figure 1). The decrease in 1988 was due to BP America's repayment of notes to its U.K. parent, British Petroleum, of $2.4 billion.[6] British Petroleum gained 100 percent ownership of Standard Oil in 1987 for $7.8 billion. Standard Oil was consolidated with British Petroleum's other North American operations into BP America. The latter transaction involved an intercompany debt flow of $5.6 billion in 1987. Excluding these amounts, additions to FDI in U.S. petroleum increased from $0.9 billion to $1.5 billion between 1987 and 1988. By contrast, additions to overall FDI totaled $57.1 billion (based on Table 1), with nearly all sectors, particularly manufacturing, registering substantial increases. As a result, the petroleum share of total FDI declined from 13.1 percent in 1987 to 10.6 percent in 1988 (Table 1), the lowest value since at least 1974.

The value of the largest FDI-related transactions in 1988 (see box) was split between downstream petroleum (refining, marketing, and distribution) and upstream petroleum (oil and gas production). Foreign affiliates have increased their role in U.S. refining and marketing in recent years. Their share of U.S. refining capacity, which was less than 15 percent in 1984, increased from 21 percent to 27 percent between 1987 and 1988 (refining operations are discussed in detail in the next chapter). Two developments underlie the increased role of foreign affiliates in U.S. downstream petroleum operations. First, a number of nations belonging to the Organization of Petroleum Exporting Countries (OPEC) have sought to integrate oil production operations with petroleum refining (vertical integration). Kuwait, Venezuela, and, most recently, Saudi Arabia have acquired downstream petroleum assets in industrialized countries. Vertical integration tends to moderate income fluctuations stemming from frequent, wide swings in the price of oil. Additionally, assured placement of oil production

[5] One of the components of FDI consists of equity and intercompany account capital flows between a foreign investor and its U.S. affiliate measured on a net basis. Since this component is measured on a net basis, it can have a negative value.

[6] In their financial statement for 1988, BP America reported an inflow of $5,570 million in long-term notes payable to affiliates in 1987 and an outflow in repayment of these notes of $2,434 million in 1988.

Figure 1. Additions to Foreign Direct Investment in U.S. Petroleum and U.S. Direct Investment in Foreign Petroleum, 1978-1988



Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business* (Washington, DC, August 1985, August 1988, and August 1989).

Table 1. Foreign Direct Investment in U.S. Petroleum and U.S. Direct Investment in Foreign Petroleum, 1980-1988

Year	Foreign Direct Investment in U.S. Petroleum [a b]	Total Foreign Direct Investment in U.S. [b]	Petroleum As Percent of Total	U.S. Direct Investment in Foreign Petroleum [a c]	Total U.S. Direct Investment Abroad [c]	Petroleum As Percent of Total
	(billion dollars)			(billion dollars)		
1980	12.2	83.0	14.7	47.6	215.4	22.1
1981	15.2	108.7	14.0	53.2	228.3	23.3
1982	17.7	124.7	14.2	57.8	207.8	27.8
1983	18.2	137.1	13.3	57.6	207.2	27.8
l984	25.4	164.6	l5.4	58.1	211.5	27.5
1985	28.3	184.6	15.3	57.7	230.2	25.1
1986	29.1	220.4	13.2	58.5	259.8	22.5
1987	35.6	271.8	13.1	61.8	308.0	20.1
1988	34.7	328.9	10.6	59.7	326.9	18.3

[a]The petroleum industry includes all phases of petroleum exploration, production, refining, transport,and marketing.
[b]Foreign direct investment (FDI) is the value of foreign parents' net equity in, and outstanding loans to, U.S. affiliates at the end of the year.
[c]The value of U.S. parents' net equity in, and loans to, foreign affiliates.
Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business* (Washington, DC, August 1989).

Major FDI-Related Transactions in the U.S. Energy Industry, 1988

Texaco Inc. sold Saudi Arabia a 50-percent interest in Texaco's refining/marketing business in 23 U.S. East and Gulf Coast States and the District of Columbia. The deal involved the formation of Star Enterprise, a joint venture partnership, including three refineries with combined crude distillation capacity of 615,000 barrels per calendar day (b/d), 50 product distribution terminals with combined 300,000 b/d storage and 12,400 Texaco branded stations. Purchase price was $812 million.

ADC Acquisition Corp., a unit of Horsham Corp. Toronto, purchased Clark Oil & Refining Co. and other assets from Apex Oil Co. for $650 million. Clark's main assets are two refineries in Illinois, at Blue Island and Hartford, with combined capacity of 124,600 b/d.

Total Minatome Corp. completed its acquisition of CSX Oil & Gas Corp. for $612 million.

American Petrofina Inc., completed the purchase of the Gulf Coast/Southwestern exploration and production business of Tenneco Inc. for $600 million.

Ultramar plc, London, paid $440 million to Union Pacific Corp., for its Wilmington, California, refinery. The refinery has crude distillation capacity of 65,000 b/d.

BP America Inc. completed the acquisition of the Dallas, Texas, firm of Lear Petroleum Corp., for $286 million.

Shell Western E&P Inc., a unit of Shell Oil Co., acquired 165 tracts of Federal oil and gas leases in the Chukchi Sea, Alaska, at a total cost of $271 million.

Olympia & York Ltd., Canada, acquired an equity interest amounting to 19.3 percent of Santa Fe Southern Pacific Inc. The total value of the shares, accumulated over a twelve-month period, was $236 million.

Gulf Canada Resources acquired the U.S. assets and liabilities of Home Petroleum Corp., Denver, Colorado, for $191 million.

BP America's Sohio Oil Co. purchased Mobil Oil Corp.'s 79,000 b/d Ferndale, Washington, refinery, and interest in Olympic Pipeline Co., for $152.5 million.

Caspen Oil plc, London, formerly Bryson Oil and Gas plc, acquired 10.5 million newly issued common shares, or about 71 percent of Summit Energy Inc's outstanding stock. In exchange, Summit acquired 100 percent of the stock of Caspen's U.S. subsidiary, Bryson Oil and Gas Corp, and received $3 million in cash. Summit was subsequently renamed Caspen Oil, Inc. The total value was $149 million.

Canadian Oxy Offshore Production Co., a subsidiary of Canadian Occidental Petroleum Ltd., acquired Moore McCormack Energy Inc. from Moore McCormack Resources Inc., subsequently renamed CXY Energy, for $148.75 million.

Tejas Gas Corp, a subsidiary of Hamilton Oil, completed its purchase of Gulf Energy Development Corp. for $140 million, from Penn Central Corp.

Bridge Oil Co., Texas, a subsidiary of Bridge Oil Co. Ltd., Australia, acquired a 100-percent interest in Petrus Oil & Gas LP, Dallas, Texas, for $112 million.

Petroleos de Venezuela (PDVSA) became sole owner of a major U.S. refinery with its purchase of the remaining 50 percent of Champlin Refining Co. PDVSA paid $50 million to Champlin's parent Union Pacific Corp., plus $25 million in retained Champlin earnings.

Pyro Energy Corp. acquired Jim Smith Coal Co., Kentucky, a privately held coal company, for $50 million. The acquisition added more than 100 million tons to Pyro's recoverable reserve base.

See Appendix A for further information.

can be a benefit of vertical integration. In 1988, two transactions increased the role of OPEC nations in U.S. petroleum refining and marketing. Saudi Arabia, through its Aramco subsidiary, formed Star Enterprise, a 50-50 joint venture with Texaco. The transaction was valued at $812 million and involved three refineries with total crude distillation capacity of 615,000 barrels per calendar day (b/d). The second transaction involved Petroleos de Venezuela (PDVSA) who extended their U.S. refinery investments to include the Champlin refinery in Corpus Christi, Texas, which has a crude distillation capacity of 130,000 b/d. PDVSA purchased Union Pacific's 50 percent share of this facility for a total value of $75 million.

Second, foreign investor interest in U.S. refining and marketing, apart from OPEC-related transactions, roughly paralleled the recovery in the profitability of these operations.[7] In addition to the transactions noted above, FDI-related transactions involving U.S. refining and marketing assets included Horsham Corporation's purchase of Union Pacific's Wilmington refinery, Hill Petroleum Company's acquisition of Texas City Refining, and Pauley Petroleum's acquisition of Fletcher Oil and Refining Company. The divestiture of Atlantic Petroleum Corporation by John Deuss ran counter to the trend of increased foreign ownership of U.S. downstream petroleum assets. However, the divestiture was related more to the investor's short-term financial situation than to expectations of reduced U.S. refining profitability.

Foreign investor interest in U.S. oil and gas production was mixed in 1988. Major FDI-related acquisitions included Total Minatome's acquisition of CSX Oil and Gas Corporation, American Petrofina's purchase of Tenneco's onshore U.S. oil and gas properties in the Gulf and Southwest regions, BP America's acquisition of Lear Petroleum Corporation, Canadian Occidental Petroleum's acquisition of Moore McCormick Energy, and Gulf Canada Resources' acquisition of Home Petroleum Company.

Several foreign-affiliated energy companies withdrew from U.S. oil and gas operations in 1988. Newmont Mining, Total Petroleum North America, and Trans-Canada Pipelines sold all of their U.S. oil and gas assets in 1988. Low profitability in recent years has contributed to a general reduction in investment in U.S. oil and gas production. After a modest recovery in 1987, U.S. oil prices fell back to levels that nearly matched the lows of 1986. As a consequence, income from U.S. oil and gas production declined in 1988.[8] Also contributing to the decision by some foreign affiliates to withdraw from this industry was the high cost of finding additional oil and gas reserves in the United States. In recent years, U.S.-based multinational petroleum companies have shifted the composition of their exploration and development activity away from the United States. For example, the foreign share of worldwide exploration and development expenditures of the 22 major energy companies that are included in EIA's Financial Reporting System (FRS) increased from 27 percent in 1984 to 40 percent in 1987.[9]

Investment in petroleum flows both in and out of the United States. The value of U.S. direct investment in foreign petroleum (outward investment) by U.S.-based companies declined in 1988 (Table 1). The $2.1 billion reduction largely reflected divestitures of foreign petroleum operations by major U.S. petroleum companies. Texaco sold Deutsche Texaco for $1.2 billion as part of Texaco's restructuring subsequent to Chapter 11 bankruptcy. Tenneco sold all of their petroleum operations in 1988, including the sale of Colombian oil and gas properties to Royal Dutch/Shell Group for $500 million and North Sea oil and gas properties to British Gas for $195 million. In another large reduction of U.S. interests in Colombia, Occidental Petroleum sold a 25-percent interest in its Colombia oil and gas subsidiary to Repsol, the state-controlled energy company of Spain, for $272 million. Atlantic Richfield sold its 24-percent interest in Britoil, which was acquired in 1987 in a transaction valued at $758 million, but purchased Tricentrol for $710 million. The largest acquisition of foreign petroleum assets by a U.S. company in 1988 involved Amoco's acquisition of Dome Petroleum in a transaction valued at $4.2 billion. However, the investment statistics do not reflect the bulk of this value due to the Department of Commerce's accounting framework and the financing of this transaction.[10]

The variety of asset sales underlying the reduction in the value of U.S. direct investment in foreign petroleum masks the continuing interest of U.S. major petroleum companies in foreign oil and gas development in 1988. Based on preliminary FRS data, major U.S. energy companies increased their foreign exploration and development expenditures by 41 percent, to $13.0 billion, in 1988 compared to 1987. The number of foreign wells completed by these com-

[7] "Higher Prices Yield Improved Energy Industry Financial Results in the First Half of 1989," Energy Information Administration, *Monthly Energy Review*, June 1989, DOE/EIA-0035(89/06) (Washington, DC, September 1989).

[8] "Increased Refining Income Led U.S. Energy Industry Financial Recovery in 1988," Energy Information Administration, *Monthly Energy Review*, December 1988, DOE/EIA-0035(88/12) (Washington, DC, March 1989).

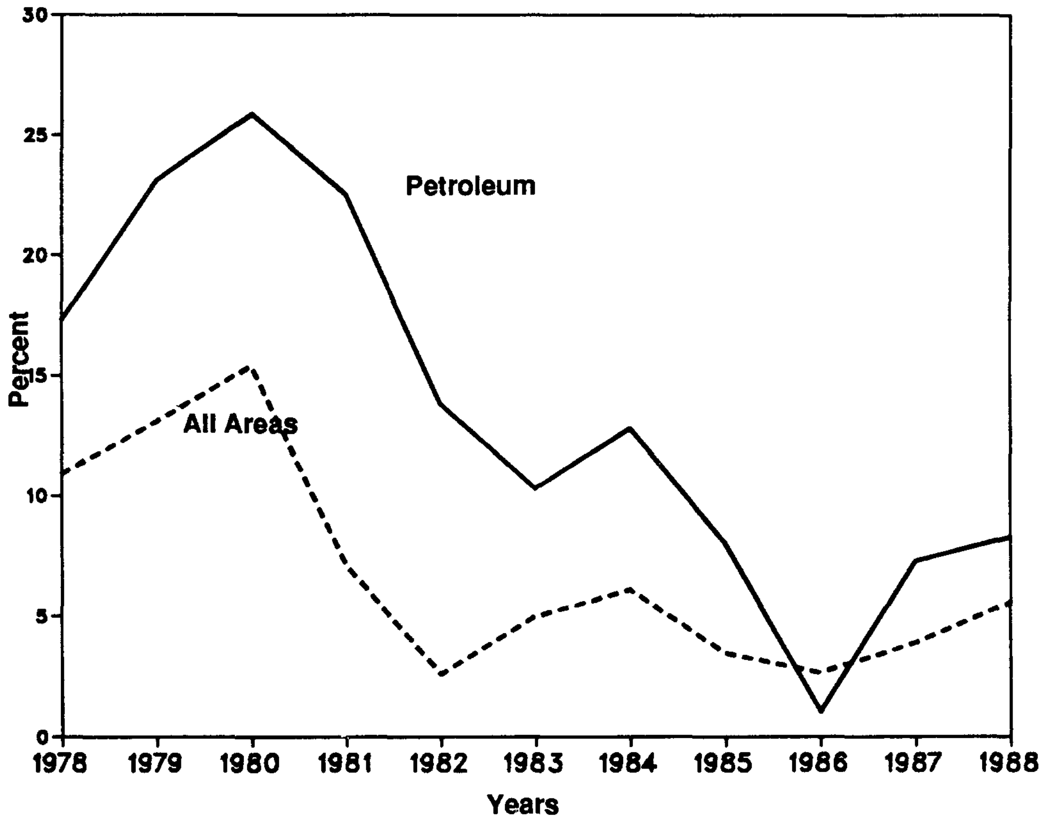
[9] See Energy Information Administration, *Performance Profiles of Major Energy Producers 1987*, DOE/EIA-0206(87) (Washington, DC, January 1989), for detailed financial and operating information concerning the FRS companies.

[10] The Dome Petroleum acquisition involved only a $437 million cash outlay according to Amoco's *Annual Report 1988*.

panies rose by 17 percent over the same period. Drilling in areas outside of the Western Hemisphere rose 44 percent and expenditures for Canada and Europe rose $4.9 billion.

The rate of return on FDI in petroleum[11] increased modestly in 1988 (Figure 2), despite a fall in U.S. crude oil prices to the low levels of 1986. In recent years, U.S. refined product price movements have lagged changes in crude oil costs. During most of 1988, crude oil prices were declining which, given the lag between changes in crude oil prices and refined product prices, yielded substantial increases in refiners' margins. On balance in the U.S. petroleum industry in 1988, gains in refining/marketing income more than offset reductions in oil and gas income.

Figure 2. Rates of Return on Foreign Direct Investment in the United States, 1978-1988[a]



[a]This rate of return is defined as annual income from FDI accruing to foreign parents divided by the average of the FDI position of foreign parents at the beginning and end of the year.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, (Washington, DC, August 1982, August 1988, and August 1989).

[11] The rate of return is defined as the foreign investors' income from foreign-affiliated U.S. companies divided by the average of the beginning-of-year and end-of-year balances of the parents' FDI position. The foreign investors' income from the foreign-affiliated U.S. company is calculated by including its share in net income (after U.S. income taxes) plus net interest paid to the parents' intercompany accounts, less withholding taxes on dividends and interest. This rate of return is not directly comparable to rates of return computed from corporate financial data. An analysis of rates of return based on financial data is provided in Chapter 4.

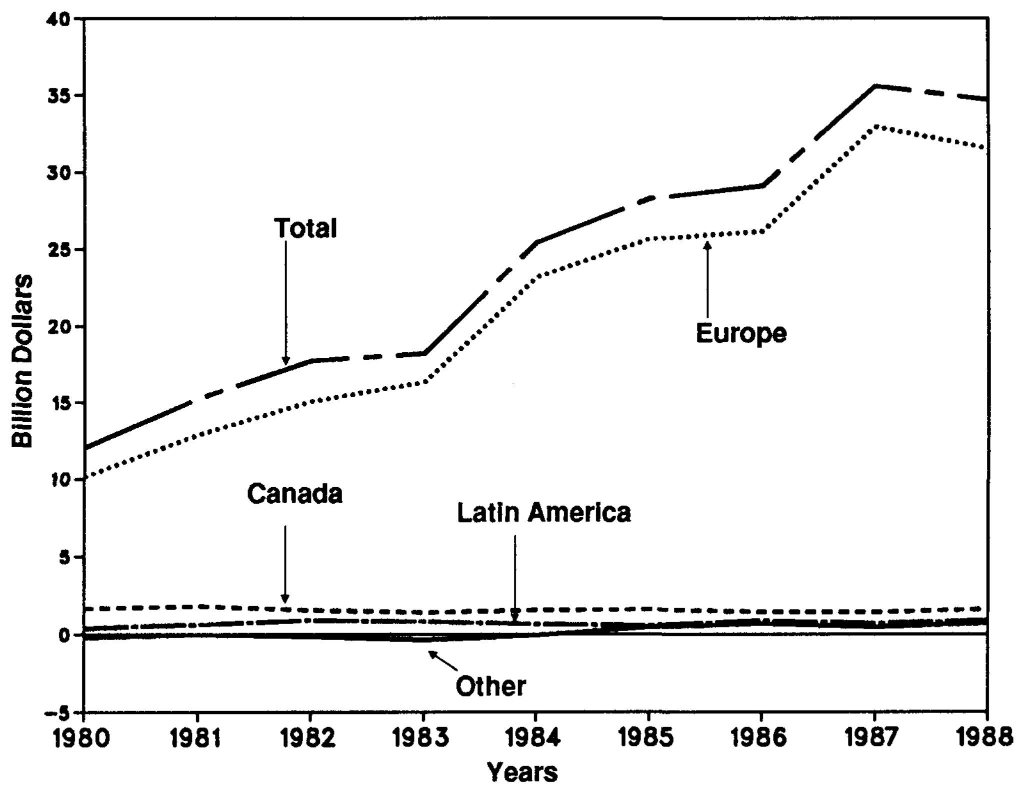
Sources of Foreign Direct Investment in U.S. Petroleum

European interests continued to dominate the composition of FDI in U.S. petroleum (Figure 3). In 1988, the share of FDI in U.S. petroleum traceable to European interests slipped somewhat from the prior year but remained above 90 percent (Table 2). BP America's $2.4 billion repayment of debt to its U.K. parent was the primary source of the decline. Despite this large capital outflow, the U.K. share of FDI in U.S. petroleum was still higher than in 1986 and earlier years. The increase largely reflects British Petroleum's acquisition of 45 percent of Standard Oil Company's common stock in 1987 which gave the parent 100 percent ownership. This transaction had a value of $7.8 billion and a capital inflow of $5.6 billion.

Canadian interests increased slightly, from 4.0 percent of FDI in U.S. petroleum in 1987 to 4.7 percent in 1988. Although the increase was small, it is notable because it was the first increase in the Canadian share of FDI in U.S. petroleum since 1980. Deregulation of the Canadian energy industry in recent years and government policies encouraging indigenous investment in the earlier years of this decade contributed to the steady decline in the Canadian share of FDI in U.S. petroleum, from 15 percent in 1980 to 4 percent in 1987.

The OPEC nations' share of FDI in U.S. petroleum was 2.1 percent in 1988, up from 0.1 percent in 1985, the most recent year that the OPEC share was disclosed by the U.S. Department of Commerce. The $745 million of FDI in U.S. petroleum attributed to OPEC nations primarily reflected Petroleos de Venezuelas's (PDVSA's) investments in U.S. refining and marketing. These investments include a 50-percent joint venture ownership in Citgo Petroleum valued at $590 million in 1986, a 50-percent joint venture ownership in Champlin Petroleum valued at $93 million in 1987, and purchase of the remaining 50 percent ownership of Champlin Petroleum for $75 million in 1988. A number of investments by the OPEC nations related to U.S. petroleum apparently were classified in other industries or in other nations by the U.S. Department of Commerce. Such classification can occur due to the location and primary industry of the OPEC country's subsidiary which actually carried out the transaction. Among these investments are Kuwait Petroleum Corporation's acquisition of Santa Fe International for $2.5 billion in 1981, the settlement in 1986 between Sonatrach (the Algerian national oil company) and Panhandle Eastern which gave the former company a $330 million equity position in the latter company, and the Star Enterprise joint venture between Saudi Arabia and Texaco valued at $812 million in 1988. Adding these latter values to the OPEC nations' FDI position

Figure 3. Sources of Foreign Direct Investment in U.S. Petroleum by Geographic Area, 1980-1987



Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business* (Washington, DC, August 1989).

Table 2. Geographic Sources of Foreign Direct Investment in U.S. Petroleum, 1984-1988

Source	1984	1985	1986	1987	1988	1984	1985	1986	1987	1988
	(million dollars)					(percent of total)				
All Countries	25,400	28,270	29,094	35,598	34,704	100.0	100.0	100.0	100.0	100.0
Canada	1,544	1,589	1,432	1,426	1,614	6.1	5.6	4.9	4.0	4.7
Europe[a]	23,142	25,636	26,139	32,957	31,536	91.1	90.7	89.8	92.6	90.9
Netherlands	9,981	11,481	(b)	(b)	(b)	39.3	40.6	(b)	(b)	(b)
United Kingdom	10,991	12,155	11,758	(b)	18,779	43.3	43.0	40.4	(b)	54.1
Japan	-88	31	-34	-2	-79	-0.3	0.1	0.1	(c)	-0.2
Latin America[d]	656	577	889	748	898	2.6	2.0	3.1	2.1	2.6
Other	146	437	668	469	735	0.6	1.5	2.3	1.3	2.1
Memorandum:										
OPEC[e]	12	17	(b)	(b)	745	(c)	0.1	(b)	(b)	2.1

[a]Europe consists of Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Sweden, Switzerland, and the United Kingdom.

[b]Data withheld by U.S. Department of Commerce to prevent disclosure.

[c]Less than 0.05 percent.

[d]Latin America consists of Western Hemisphere nations excluding the United States, Puerto Rico, the U.S. Virgin Islands, and Canada.

[e]The OPEC countries are Algeria, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, Venezuela, and the United Arab Emirates.

Note: Total may not equal sum of components due to independent rounding.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business* (Washington, DC, August 1989).

in U.S. petroleum suggests that the OPEC share might be closer to 11 percent rather than 2 percent.

Examining the composition of additions to FDI and the composition of FDI-related earnings shows the role of reinvested earnings. Additions to FDI are composed of reinvested earnings and net capital inflows. Net capital inflows are subdivided into the sum of equity capital increases and decreases and the net change in debt position between foreign affiliates and their foreign parent companies.[12] Since capital flows both in and out of the United States, net capital flows can be either positive, indicating a net inflow, or negative, indicating a net outflow. In 1988, net capital flows related to FDI in U.S. petroleum were negative, equaling minus $1.6 billion (Table 3). Net capital flows in 1987 and 1988 were strongly affected by intercompany debt and repayments of debt associated with British Petroleum's gain of 100 percent ownership of Standard Oil Company. Deleting these amounts from the net capital flows reported in Table 4 shows that, apart from the British Petroleum transaction, net capital inflows increased from negative $0.3 billion in 1987 to positive $0.9 billion in 1988. The negative value in 1987 was traceable to a net reduction in intercompany debt. Net reduction in intercompany debt generally indicates that, on balance, foreign affiliates repaid a greater amount of debt to their foreign parents than was lent to the affiliates during the year. The net capital inflow in 1988 was almost entirely traceable to a net increase in equity. Net capital flows ($0.9 billion) in 1988 exceeded reinvested earnings ($0.7 billion) as a source of added FDI in U.S. petroleum, excluding the effect of the British Petroleum transaction. This pattern has prevailed since 1984.

Reinvested earnings declined from $1.3 billion in 1987 to $0.7 billion in 1988. From 1981 through 1987, reinvested earnings and earnings from FDI in petroleum tended to move in parallel (Table 4). However, in 1988, reinvested earnings declined although earnings rose. The break in this trend was caused by a substantial rise

[12] Equity and intercompany account capital flows measure the investment and lending from the foreign investor to its U.S. affiliate on a net basis. Since this measure is on a net basis, it can be negative if, as occurred in 1980, 1983, and 1988, repayments by U.S. affiliates to their foreign parents exceed the investment by the parents in the affiliates. Reinvested earnings are earnings of the U.S. affiliate due the foreign investor less dividends declared.

Table 3. Additions to Foreign Direct Investment in U.S. Petroleum, 1977-1988
(Million Dollars)

Year	Total Additions	Equity and Intercompany Account Net Capital Flows	Reinvested Earnings of Incorporated Affiliates	Valuation Adjustments
1977	653	52	601	0
1978	1,189	303	940	-54
1979	2,144	499	1,645	0
1980	2,294	-59	2,161	192
1981	3,046	919	2,246	-119
1982	2,414	1,409	1,002	3
1983	549	-57	565	40
1984	7,191	5,581	1,628	-19
1985	2,870	2,581	565	-276
1986	824	1,776	-1,114	162
1987	6,504	5,304	1,315	-115
1988	-894	-1,559	696	-31

Note: Components may not sum to total due to independent rounding.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business* (Washington, DC, August 1982, October 1984, August 1986, August 1987, August 1988, and August 1989). U.S. Department of Commerce, Bureau of Economic Analysis, *Selected Data on Foreign Direct Investment in the United States, 1950-79* (Washington, DC, December 1984).

in foreign affiliates' distribution of earnings to their foreign parent companies. Dividends distributed to foreign investors in 1988 rose nearly fourfold from 1987, reaching a peak value of $1.5 billion in the 1980s. The increase in distributed earnings reflected BP America's payment of dividends to its foreign parents. BP America's cash dividends, all of which were paid to British Petroleum, who owns 100 percent of BP America's common stock, increased from $182 million in 1987 to $1,200 million in 1988. Excluding these amounts suggests that distributed earnings showed a much smaller increase between 1987 and 1988, from $212 million to $259 million.

Foreign Direct Investment and Rates of Return in U.S. Coal

Foreign affiliates maintained a significant position in U.S. coal production in 1988. Their share of U.S. bituminous coal and lignite production rose slightly, from 20 percent in 1987 to 21 percent in 1988, an all-time high (see Chapter 3). The growth in the foreign affiliates' share was the result of somewhat greater growth in their production compared to other coal producers. Foreign-affiliated companies made few acquisitions of U.S. coal producers in 1988. Pyro Energy Corporation's purchase of Jim Smith Coal

Table 4. Distributed and Reinvested Earnings for Foreign Direct Investment in U.S. Petroleum, 1981-1988
(Million Dollars)

Year	Earnings	Distributed	Reinvested
1981	3,118	872	2,246
1982	2,241	1,239	1,002
1983	1,593	1,028	565
1984	2,402	774	1,628
1985	1,668	1,103	565
1986	-209	904	-1,114
1987	1,709	394	1,315
1988	2,155	1,459	696

Source: 1987 and 1988: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business* (Washington, DC, August 1989). 1986: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business* (Washington, DC, August 1988). 1985: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business* (Washington, DC, August 1987). 1984: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business* (Washington, DC, August 1986). All 1983 data and reinvested earnings for 1981 and 1982: *Survey of Current Business* (Washington, DC, August 1985). Earnings for 1981 and 1982: *Survey of Current Business* (Washington, DC, October 1984); distributed earnings for 1981 and 1982 were computed as the difference between earnings and reinvested earnings.

Company, for $50 million, was the largest reported acquisition in 1988. Olympia and York's gain of 19 percent ownership of Santa Fe Southern Pacific, though not primarily related to energy, also added to the foreign affiliates' U.S. coal production in 1988. The dissolution of Enoxy Coal was the largest FDI-related divestiture of U.S. coal operations in 1988. Enoxy Coal was a 50-50 joint venture between Occidental Petroleum and Ente Nazionali Idrocarburi, the state energy company of Italy. Occidental Petroleum retained the venture's two West Virginia mines.

Additions to FDI in coal were $236 million in 1988. The FDI position in coal rose by 7 percent to $3,459 million, slightly below the peak value in 1986 (Table 5). In 1988 the rate of return on FDI in U.S. coal turned positive for the first time since 1983.

Table 5. Foreign Direct Investment, Additions to Foreign Direct Investment, and Rate of Return on Foreign Direct Investment in U.S. Coal, 1981-1988

Investment and Rate of Return	1981	1982	1983	1984	1985	1986	1987	1988
	(million dollars)							
FDI in U.S. Coal	1,135	1,208	1,281	2,637	2,871	3,480	3,223	3,459
Additions to FDI in U.S. Coal	657	73	73	1,356	234	609	-257	236
	(percent)							
Rate of Return on FDI in U.S. Coal	1.9	-3.0	(a)	-7.0	-12.0	-7.1	-0.2	2.0

[a]Less than 0.05 percent.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business* (Washington, DC, August 1989).

3. The Role of Foreign-Affiliated Companies in U.S. Energy Operations

Oil and Gas Reserves and Production

The year 1988 was not a strong year for U.S. oil exploration and development. In response to the decline in U.S. oil prices, overall drilling in the United States fell by 12 percent.[12] For oil wells, drilling declined more steeply, by 20 percent. As a result of lessened drilling activity, additions to U.S. oil reserves (crude oil and natural gas liquids [NGLs]) did not keep pace with production. U.S. oil reserves declined by 1 percent between 1987 and 1988 (Table 6). For companies that were foreign affiliated in 1988, U.S. oil reserves declined at a slightly faster rate.[13] However, the foreign affiliates' share of U.S. oil reserves increased by 0.4 percentage points due to the addition of Santa Fe Southern Pacific and their reserves to the foreign affiliates group in 1988. Among the foreign affiliates, BP America registered the largest decline in U.S. oil reserves, 275 million barrels. BP America replaced only 16 percent of their U.S. oil production through reserve additions in 1988.

U.S. gas reserves, by contrast, increased between 1987 and 1988 by 3 percent.[14] Natural gas prices rose somewhat in 1988 and drilling shifted toward natural gas. Foreign affiliates' U.S. natural gas reserves rose 6 percent, increasing their share to 11.1 percent. Among the foreign affiliates, American Petrofina registered the largest increase in natural gas reserves (396 billion cubic feet) largely due to their acquisition of Tenneco's onshore reserves in the Southwest and Gulf States regions.

Total foreign oil reserve holdings of major U.S. energy companies were twice as great as the U.S. oil reserve holdings of foreign-affiliated companies. The aggregate foreign crude oil and NGL reserve interest of the major energy companies reporting to EIA's Financial Reporting System (FRS) in 1988 was 13.2 billion barrels (Table 7). These reserves accounted for 2 percent of the total free-world holdings outside of the United States.[15] In 1988, foreign oil reserves of the U.S. companies fell by 1 percent. The excess of sales of reserves over purchases of reserves more than accounted for the decline. Apart from purchases and sales of proven reserves, foreign reserve additions of the U.S. companies exceeded production.

U.S. oil production declined in response to the low level of crude oil prices during the 1986 through 1988 period. In 1988, U.S. oil production declined 2 percent from the prior year's level (Table 8). Foreign affiliates' U.S. oil production rose by 3 percent because of the addition of Santa Fe Natural Resources to the foreign affiliates group in 1988. The foreign affiliates' share of U.S. oil production rose from 16.1 percent in 1987 to 16.8 percent in 1988.

U.S. natural gas production rose 1 percent in 1988 over 1987 production. Slightly higher wellhead gas prices and increased natural gas demand from non-utility consumers were largely responsible for the rise in production. Natural gas production of foreign affiliates increased by 6 percent. The addition of Santa Fe Natural Resources and increased production of companies that were foreign affiliated in the prior year were about equally responsible for the increase in production. As a result, the foreign affiliates' share of U.S. natural gas production increased from 8.0 percent in 1987 to 8.4 percent in 1988.

Refining and Gasoline Marketing

Foreign investor interest in U.S. refining increased substantially in 1988. Foreign-affiliated companies' share of U.S. crude distillation capacity increased from 21.0 percent in 1987 to 27.1 percent in 1988 (Table 9). Since 1984, the foreign affiliates' share of U.S. crude distillation capacity has nearly doubled. The increased foreign investor interest can be traced to two developments in recent years: a move toward vertical integration by some OPEC nations and a rebound in U.S. refining profitability from the low levels experienced during most of the 1980s. Saudi Arabia

[12] Energy Information Administration, *Monthly Energy Review*, June 1989, DOE/EIA-0035(89/06) (Washington, DC, September 1989).

[13] Reserves and production data are reported in this section on a net ownership basis and were compiled from company annual reports to shareholders and from Securities and Exchange Commission Form 10-K.

[14] Natural gas reserves and reserve additions exclude writedowns of Alaskan North Slope reserves.

[15] Total free-world reserves taken from British Petroleum Company, *BP Statistical Review of World Energy* (London, June 1989).

Table 6. Domestic Oil and Dry Natural Gas Proved Reserves and Production for Foreign-Affiliated U.S. Companies, 1987 and 1988

Fuel Type	Foreign-Affiliated Companies [a]	U.S. Total	Foreign-Affiliated Share of U.S. Total
			(percent)
Crude Oil and Natural Gas Liquids [b]			
Proved Reserves			
December 31, 1986	5,626	35,054	16.0
December 31, 1987	6,344	35,403	17.9
1987 Production	589	3,620	16.3
1987 Gross Reserve Additions	1,307	3,969	32.9
1987 Ratio of Gross Reserve Additions to Production	2.22	1.10	NM
Proved Reserves			
December 31, 1987	6,453	35,403	18.2
December 31, 1988	6,433	35,063	18.3
1988 Production	605	3,565	17.0
1988 Gross Reserve Additions	585	3,225	18.1
1988 Ratio of Gross Reserve Additions to Production	0.97	0.90	NM
Dry Natural Gas [c]			
Proved Reserves			
December 31, 1986	20,168	191,586	10.5
December 31, 1987	20,140	187,211	10.8
1987 Production	1,330	16,114	8.3
1987 Gross Reserve Additions	1,302	11,739	11.1
1987 Ratio of Gross Reserve Additions to Production	0.98	0.73	NM
Proved Reserves			
December 31, 1987	20,219	187,211	10.8
December 31, 1988	21,289	192,624	11.1
1988 Production	1,405	16,670	8.4
1988 Gross Reserve Additions	2,475	22,083	11.2
1988 Ratio of Gross Reserve Additions to Production	1.76	1.33	NM

[a]Reserves and production are on a net ownership interest basis. The first set of reserves and production data, under each fuel type, is for companies identified as foreign affiliated and reporting oil and/or natural gas production during 1987. The second set is for companies identified as foreign affiliated during 1988 and reporting oil and/or natural gas production during 1988.

[b]Millions of 42-gallon U.S. barrels.

[c]Billions of cubic feet, 14.73 psia, 60 degrees Fahrenheit. Natural gas reserves exclude Alaskan North Slope reserve writedowns.

NM = Not meaningful.

Source: Foreign-affiliated data: Companies' Form 10-K filed with the Securities and Exchange Commission and Annual Reports to Shareholders. U.S. totals: Energy Information Administration, *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves, 1988 Annual Report*, DOE/EIA-0216(88) (Washington, DC, November 1989).

entered the U.S. refining sector in 1988 through its 50-percent ownership of Star Enterprise, a joint venture with Texaco. Star Enterprise gained Texaco's refineries in Delaware, Louisiana, and Texas, adding 615,000 barrels per calendar day (mb/d) of crude distillation capacity to the foreign affiliates' total. In 1988, Petroleos de Venezuela (PDVSA), a state-owned company, increased its ownership of Champlin Petroleum from 50 percent to 100 percent. PDVSA is also a 50-percent partner in the Citgo Petroleum joint venture with Southland Corporation. Saudi Arabian and Venezuelan U.S. refinery ownership amounted to 1,050 mb/d, or 7 percent of U.S. crude distillation capacity in 1988.

Non-OPEC foreign investors on balance added to their U.S. refining ownership in 1988. Transactions related to U.S. refining in 1988, included (crude distillation capacity shown in parentheses):

Table 7. Foreign Crude Oil and Natural Gas Liquids Reserve Interest for FRS Companies, 1988 and Percent Change from 1987

Crude Oil and NGL Reserve Interest	Total Foreign	Canada	OECD Europe	Africa	Middle East	Other Eastern Hemisphere	Other Western Hemisphere
				(million barrels)			
1988							
Total Crude and NGL Reserve Interest[a]	13,219	2,750	3,814	1,590	1,882	2,348	834
				(percent)			
Percent Distribution by Geographic Region, 1988							
Total Crude and NGL Reserve Interest	100.0	20.8	28.9	12.0	14.2	17.8	6.3
Percent Change from 1987							
Total Crude and NGL Reserve Interest	-0.9	8.3	-0.5	-3.7	-5.5	0.3	-15.0

[a]The components of total foreign crude oil and natural gas liquids reserve interest are net ownership interest reserves (88.5 percent) and "Other Access" reserves (11.5 percent). "Other Access" reserves include proportional interest in investee reserves and foreign access reserves.

Note: Total may not equal sum of components due to independent rounding. While four of the FRS companies are foreign-affiliated, their foreign reserves are a small portion of the FRS total.

Source: Energy Information Administration, *Form EIA-28* (Financial Reporting System)

- Horsham Corporation's acquisition of Clark Oil & Refining (128 mb/d)
- Hill Petroleum's acquisition of Texas City Refining (120 mb/d)
- BP America's purchase of Mobil's Ferndale, Washington, refinery (79 mb/d)
- American Ultramar's purchase of Union Pacific's Wilmington, California, refinery (65 mb/d).
- Sinochem's 50-50 joint venture with Coastal Corporation in Pacific Refining (55 mb/d).
- Fletcher Oil & Refining, a foreign affiliate, sold its Carson, California, refinery (30 mb/d) to Pauley Petroleum which also is foreign affiliated.
- Atlantic Petroleum, a foreign-affiliated company, sold their Philadelphia, Pennsylvania, refinery (125 mb/d) to Sun Company.

The acquisitions and divestitures, described above, together with changes in the U.S. refining capacity of foreign-affiliated companies and the OPEC-related transactions, increased the foreign affiliates' capacity by 905 mb/d in 1988 compared with 1987. By contrast, total U.S. crude distillation capacity fell by 260 mb/d.

The role of foreign-affiliated companies in U.S. gasoline marketing roughly paralleled their increased prominence in U.S. refining operations. Gasoline outlets obtained in the acquisition of Clark Oil & Refining by Horsham Corporation and the formation of Star Enterprise more than offset the net reduction in the number of gasoline outlets supplied by the foreign-affiliated companies in 1988. The number of branded retail gasoline outlets supplied by foreign-affiliated companies increased by 2 percent, compared with 1987, to 39,805 (Table 10). Their share of total U.S. retail outlets increased from 34 percent to 36 percent and their share of total gasoline supplied in the United States increased from 22 percent to 24 percent over the same period.

The FRS companies, which account for nearly all of U.S.-based companies' activity in foreign refining, showed essentially no change in their foreign refining capacity between 1986 and 1987 (Table 11). Total refining capacity abroad rose by 2 percent over the same period. The FRS companies' share of foreign refining capacity slipped by a fraction of a percent but remained close to 12 percent. The foreign refining facilities of the FRS companies tend to be more complex than other refineries, as evidenced by their disproportionately large share of gasoline and distillate production abroad.

Table 8. Net Production of Petroleum and Dry Natural Gas in the United States by Foreign-Affiliated U.S. Companies, 1986-1988

Company	Crude Oil and Natural Gas Liquids [a]			Dry Natural Gas [a]		
	1986	1987	1988	1986	1987	1988
	(thousand barrels per day)			(billion cubic feet)		
BP America, Inc.	720.8	846.6	857.9	56.4[b]	87.9[b]	97.8[b]
Shell Oil Company	572.6	558.9	527.3	653.0	656.0	581.0
Du Pont	126.0	106.8	106.6	248.0	219.0	238.0
Santa Fe Natural Resources Co.	NF	NF	53.3	NF	NF	33.8
American Petrofina	17.4	15.9	17.3	25.5	28.5	41.8
BHP Petroleum (Americas)	14.0	13.2	15.9	35.5	50.4	55.7
Total Minatome Corporation	(c)	5.7	11.5	1.1	17.8	41.8
Anadarko Petroleum, Inc.	11.5	9.5	9.5	77.2	94.4	128.5
Pauley Petroleum	NF	2.9	9.0	NF	0.5	13.7
Total Petroleum Limited	6.2	6.5	5.5	9.8	10.6	11.3
Adobe Resources Corporation	7.2	5.6	5.0	18.0	17.8	24.2
Elf Aquitaine Incorporated	6.0	4.8	4.7	24.7	22.3	28.2
Home Petroleum	3.6	2.7	4.3	9.0	9.4	10.9
Unimar Company	3.3	3.0	2.7	11.2	9.7	8.6
Sunshine Mining Company	3.4	2.9	2.6	13.1	12.5	11.9
Wintershall Corporation	2.0	2.8	2.4	5.3	11.3	17.3
Placer Dome Incorporated	1.8	2.3	2.4	7.2	8.7	7.7
Coho Resources	0.4	0.9	2.4	0.0	(c)	0.1
Triton Energy Corporation	1.8	2.4	2.3	4.6	7.7	8.1
Deminex U.S. Oil Company	2.0	1.6	1.8	3.7	2.9	2.7
Presidio Oil Co.	NF	NF	1.5	NF	NF	8.7
Avalon Corp.	0.2	0.8	1.1	(c)	0.3	0.4
Gulf Resources & Chemicals	1.2	1.0	0.9	7.9	6.9	5.4
Hamilton Oil Corporation	1.2	0.9	0.8	5.4	5.7	6.0
TransCanada Pipelines Limited	1.6	1.6	0.6	4.3	5.7	3.0
Newmont Mining	3.9	3.9	0.0	11.9	15.1	0.0
Pan Canadian Petroleum, Ltd	2.1	1.8	0.0	6.0	5.0	0.0
Canterra Energy Limited	1.5	1.7	0.0	3.7	4.1	0.0
Chieftain Development Company, Limited	1.5	1.3	0.0	0.2	0.4	0.0
Bow Valley Industries	1.9	0.0	0.0	3.4	0.0	0.0
Britoil U.S. Holdings Incorporated	1.7	0.0	0.0	7.7	0.0	0.0
Universal Resources Corporation	1.5	0.0	0.0	7.3	0.0	0.0
Other Companies	4.7	5.0	4.8	15.1	19.0	18.7
Total Foreign Affiliated	1,523.0	1,613.0	1,654.1	1,276.2	1,329.6	1,405.3
Total for United States	10,289.0	10,008.0	9,818.0	15,991.0	16,536.0	16,632.0
Percent Foreign Affiliated	14.8	16.1	16.8	8.0	8.0	8.4

[a]Unless otherwise noted, company production is net ownership interest production.

[b]Reported sales.

[c]Less than 0.05.

NF = Not foreign affiliated in years shown.

Note: Total may not equal sum of components due to independent rounding.

Sources: Company data: Form 10-K reports to the Securities and Exchange Commission and Annual Reports to Shareholders. Totals for the United States: Energy Information Administration, *Monthly Energy Review*, June 1989, DOE/EIA-0035(89/06) (Washington, DC, September 1989).

Table 9. U.S. Refinery Operations of Foreign-Affiliated U.S. Companies, 1984-1988

Company	Number of Refineries [a]					Total Crude Distillation Capacity [a]				
	1984	1985	1986	1987	1988	1984	1985	1986	1987	1988
						(thousand barrels per day)				
Shell Oil Company	7	7	7	7	7	1,005	1,020	1,046	1,066	1,083
BP America	3	4	4	4	5	456	664	668	668	757
Star Enterprise	NF	NF	NF	NF	3	NF	NF	NF	NF	615
Du Pont	7	6	6	6	6	430	400	393	394	397
Citgo Petroleum	NF	NF	1	1	1	NF	NF	320	320	305
Salomon Inc./Hill Petroleum	NF	1	3	3	4	NF	55	154	156	276
Total Petroleum, Ltd.	3	3	3	4	4	145	152	154	191	184
American Petrofina	2	2	2	2	2	150	150	145	145	165
Champlin Refining Co.	NF	NF	NF	1	1	NF	NF	NF	155	130
Clark Oil & Refining	NF	NF	NF	NF	2	NF	NF	NF	NF	128
Atlantic Petroleum	NF	1	1	1	(b)	NF	125	125	125	(b)
American Ultramar, Ltd	1	1	1	(c)	1	17	17	17	(c)	65
Pacific Refining Co.	NF	NF	NF	NF	1	NF	NF	NF	NF	55
Pauley Petroleum	NF	NF	NF	1	2	NF	NF	NF	23	52
Sargent Holdings, Ltd	NF	NF	1	1	1	NF	NF	33	35	35
Fletcher Oil & Refining	1	1	1	1	(d)	30	30	30	30	(d)
Asamera Inc.	1	1	1	(e)	(e)	26	26	28	(e)	(e)
E-Z Serve Inc.	NF	NF	NF	1	(f)	NF	NF	NF	20	(f)
MacMillan Ring-Free Oil Company	2	2	2	1	(g)	17	17	20	14	(g)
Total Foreign Affiliated	27	29	33	34	40	2,276	2,656	3,133	3,342	4,247
Total United States	223	216	219	213	204	15,659	15,459	15,566	15,915	15,655
Percent Foreign Affiliated	12.1	13.4	15.1	16.0	19.6	14.5	17.2	20.1	21.0	27.1

[a]Refineries operable as of December 31st in each year.

[b]Sold to Sun Co. in 1988

[c]Hanford, CA, refinery shutdown in 1987. Acquired Union Pacific's Wilmington, CA, refinery in 1988.

[d]Sold to Pauley Petroleum in 1988.

[e]Sold to Total Petroleum in 1987.

[f]Shut down.

[g]Sold to Chemoil Corp. in 1988.

NF = No foreign affiliation during this period.

Source: 1984: Energy Information Administration, *Petroleum Supply Annual 1984*, Volume 1, DOE/EIA-0340(84)/1(Washington, DC, June 1985). 1985: Energy Information Administration, *Petroleum Supply Annual 1985*, Volume 1, DOE/EIA-0340(85)/1(Washington, DC, May 1986). 1986: Energy Information Administration, *Petroleum Supply Annual 1986*, Volume 1, DOE/EIA-0340(86)/1(Washington, DC, May 1987). 1987: Energy Information Administration, *Petroleum Supply Annual 1987*, Volume 1, DOE/EIA-0340(87)/1 (Washington, DC, May 1988). 1988: Energy Information Administration, *Petroleum Supply Annual 1988*, Volume 1, DOE/EIA-0340 (88)/1 (Washington, DC, May 1989)

Table 10. Branded Retail Outlets and Total Gasoline Supplied by Foreign-Affiliated U.S. Companies, 1984-1988

Company	1984	1985	1986	1987	1988
	Total Branded Retail Outlets				
Shell Oil Company	11,010	11,129	11,133	10,947	10,847
BP America[a]	3,050	8,200	8,100	7,550	7,700
Citgo Petroleum[b]	NF	NF	7,296	7,458	7,697
Du Pont	5,430	6,276	6,860	5,918	4,843
American Petrofina	4,385	4,249	4,209	4,117	3,458
Total Petroleum, Limited	1,847	1,942	1,915	1,968	2,564
Star Enterprise	(c)	(c)	(c)	(c)	1,400
Clark Oil and Refining	NF	NF	NF	NF	946
Ultramar	368	378	136	300	350
Atlantic Petroleum	NF	547	941	940	0
Husky Oil Company	720	0	0	0	0
Total for Foreign-Affiliated Companies	26,810	32,721	40,590	39,198	39,805
U.S. Total[d]	132,080	124,600	120,150	115,870	112,000
Foreign-Affiliated Companies as Percent of U.S. Total	20.3	26.3	33.8	33.8	35.5
	Total Gasoline Supplied[e] (thousand barrels per day)				
Total for Foreign-Affiliated Companies[f]	1,066	1,285	1,565	1,586	1,751
U.S. Total[g]	6,693	6,831	7,034	7,206	7,336
Foreign-Affiliated Companies as Percent of U.S. Total	15.9	18.8	22.2	22.0	23.9

[a]BP America revised its definition of outlets to include jobbers after 1984.

[b]Jobber-supplied outlets.

[c] Not in existence during this period.

[d]Service station establishments with 50 percent or more of their dollar volume from petroleum product sales.

[e]Gasoline Supplied refers to average daily gasoline shipments.

[f]Disaggregated company numbers are considered proprietary by the Energy Information Administration. Total for foreign-affiliated companies excludes Star Enterprise which commenced operations on January 1, 1989.

[g]Total gasoline supplied.

NF= No foreign affiliation during this period.

Sources: Company station counts: *National Petroleum News (Factbook Issue), 1985-1988*, and *Annual Reports to Shareholders*, except for Ultramar (1986) for which data were provided by the company. U.S. total outlets: U.S. Department of Commerce, *Franchising in the Economy, 1987-1989* (Washington, DC, February 1989). Company gasoline volumes: Energy Information Administration, *Form EIA-782c*. Total gasoline supplied: Energy Information Administration, *Monthly Energy Review*, June 1989, DOE/EIA-0035(89/06) (Washington, DC, September 1989).

Table 11. Foreign Refinery Output and Capacity Statistics for FRS Companies and Foreign Industry, 1986 and 1987[a]

Refinery Statistics	FRS Companies	Foreign Industry	FRS as Percent of Foreign Industry
	(thousand barrels per day)		
1987			
Refinery Capacity[b]	4,625	39,441	11.7
Refinery Output[c]	4,348	32,740	13.3
Percent Gasoline	28.5	20.8	18.2
Percent Distillate	38.6	37.0	13.9
Percent Other	32.8	42.2	10.3
1986			
Refinery Capacity[b]	4,638	38,796	12.0
Refinery Output[c]	4,096	32,724	12.5
Percent Gasoline	29.5	20.3	18.2
Percent Distillate	37.4	36.8	12.7
Percent Other	33.1	43.0	9.6

[a]Foreign FRS and foreign industry data exclude operations in Puerto Rico and the U.S. Virgin Islands, as well as China and the Soviet Bloc.

[b]Year-end crude distillation capacity in thousand barrels per calendar day.

[c]Total output of refined products, for FRS companies, is total output at own refineries and refineries of others for own account.

Note: Total may not equal sum of components due to independent rounding.

Source: FRS companies: Energy Information Administration, *Performance Profiles of Major Energy Producers 1987*, DOE/EIA-0206(87) (Washington, DC, January 1989). Foreign Industry: Energy Information Administration, *International Energy Annual 1987*, DOE/EIA-0219(87) (Washington, DC, October 1988) and Energy Information Administration, *International Energy Annual 1988*, DOE/EIA-0219(88)(Washington, DC, November I989).

Coal Production

Despite the continued decline in U.S. coal prices in 1988, the year was generally favorable for U.S. coal operations. In 1988, coal consumption in the United States increased by 6 percent over the 1987 level and U.S. coal exports increased by 19 percent to their highest level since 1982.[16] In response to increased demand, U.S. coal production in 1988 rose by over 3 percent to another record. Greater demand and reduced operating costs led to substantial growth in income from U.S. coal operations in 1988 compared to 1987.[17]

Coal production of foreign-affiliated U.S. coal producers increased by 8 percent between 1987 and 1988 (Table 12 and Figure 4). As a result of the foreign affiliates' greater growth in coal production relative to the U.S. coal industry overall, their share of U.S. production rose by a percentage point, to 21 percent, in 1988. Higher rates of production by companies which were foreign affiliated in 1987 accounted for the bulk of the 15 million ton increase. Additions to production from new foreign affiliates in 1988 (AGIP Coal and Santa Fe Southern Pacific) were nearly offset by the loss of foreign affiliates' production from the dissolution of the Enoxy Coal joint venture.

Uranium Exploration and Development

Uranium exploration and development expenditures traceable to foreign interests declined from $11.9 million in 1987 to $8.9 million in 1988 (Table 13). Total U.S. industry exploration and development expenditures rose by 3 percent in 1988 to $20.2 million. As a consequence, the share of U.S. uranium exploration and development expenditures attributable to foreign interests fell from 60 percent in 1987 to 44 percent in 1988. Nevertheless, the foreign share remained at a historically high level evident since 1986.

[16]Energy Information Administration, *Quarterly Coal Report*, January-March 1989, DOE/EIA-0121(89/1Q)(Washington, DC, August 1989).

[17]Energy Information Administration, *Monthly Energy Review*, December 1988, DOE/EIA-0035(88/12)(Washington, DC, March 1989).

Table 12. Bituminous Coal and Lignite Production and Source of Ownership of Foreign-Affiliated Coal Companies in the United States, 1985-1988

Controlling Company/ Foreign-Ownership Interest	Coal Production [a]			
	1985	1986	1987	1988
	(thousand short tons)			
Consolidation Coal Co., (Du Pont)				
JES Holding, Inc.	42,702	41,529	52,500	54,900
Peabody Holding Co., (Newmont Mining)[b]				
Consolidated Gold Fields	NF	NF	39,476	40,726
Shell Oil Co.				
Royal Dutch/Shell	8,240	8,738	15,445	24,360
Utah Minerals International, Inc.				
Broken Hill Proprietary Co.	13,812	12,651	12,996	13,360
Old Ben Coal Co. (BP America)				
British Petroleum	12,273	15,220	13,254	12,986
Westmoreland Coal Co.				
Veba Kohle International	10,876	9,840	9,654	10,000
Pyro Mining Co.[c]				
Costain Group	4,854	5,258	6,200	6,677
Ashland Coal Co.				
Saarbergwerke AG/Carboex	2,798	3,269	3,950	4,800
Cannelton Industries, Inc.				
Algoma Steel, Ltd.	3,003	3,411	4,054	4,054
M.A. Hanna Co.				
Norcen Energy Resources, Ltd.	3,734	3,428	3,500	3,955
Andelex Resources, Inc.				
Andelex Resources, Inc.	1,660	2,602	2,500	3,275
Pickard Mather & Co.				
Steel Company of Canada	3,561	3,555	4,014	3,130
Great Western Coal Inc.				
Great Western Resources, Inc.	2,453	2,597	2,564	2,911
Agip Coal, Inc.				
Ente Nazionale Idrocarburi	0	0	0	2,652
Inspiration Coal, Inc.				
Hudson Bay Mining and Smelting Co., Ltd.	2,762	2,859	2,785	2,579
Santa Fe Southern Pacific Corp				
Olympia and York, Ltd	NF	NF	NF	2,107
Gulf Resources and Chemical				
HCI Holdings, Ltd./Private Investor	2,698	2,139	1,938	1,426
Carter-Roag Coal Co.				
Marquard and Bahls Coal Co.	300	267	387	588
Total American Mining				
Total Compagnie Francaise de Petroles	846	597	764	585
Tanoma Coal Co., N.V.				
Pohang Steel America, Inc.	540	560	506	369
Avery Coal Co.				
Trafalgar Industries	127	267	275	283
Coal Corp. of America (Shaker Division)				
Campbell Resources	586	250	248	60

See footnotes at end of table.

Table 12. Bituminous Coal and Lignite Production and Source of Ownership of Foreign-Affiliated Coal Companies in the United States, 1985-1988 (Continued)

Controlling Company/ Foreign-Ownership Interest	Coal Production [a] 1985	1986	1987	1988
	(thousand short tons)			
A.T. Massey Coal Co.[d]				
Royal Dutch/Shell Group	24,407	23,229	0	0
Enoxy Coal, Inc.[e]				
Ente Nazionale Idrocarburi	4,585	3,377	3,108	0
Canterra Coal[f]				
Polysar Energy & Chemical	542	526	853	0
Total Foreign Affiliated	147,359	146,169	180,971	195,783
Total United States	878,930	886,023	915,202	946,303
Percent Foreign Affiliated	16.8	16.5	19.8	20.7

[a]Coal production refers to lignite and bituminous coal production only.

[b]Only Newmont Mining's ownership share of Peabody's production is shown, which is 49.97 percent.

[c]Joint Venture with Pyro Energy Corporation.

[d]Joint venture with Fluor Corporation. The joint venture was dissolved in 1987.

[e]Joint venture with Occidental Petroleum Corporation. The joint venture was dissolved in 1988.

[f]U.S. coal operations were sold in 1988.

NF = No foreign affiliation during this period.

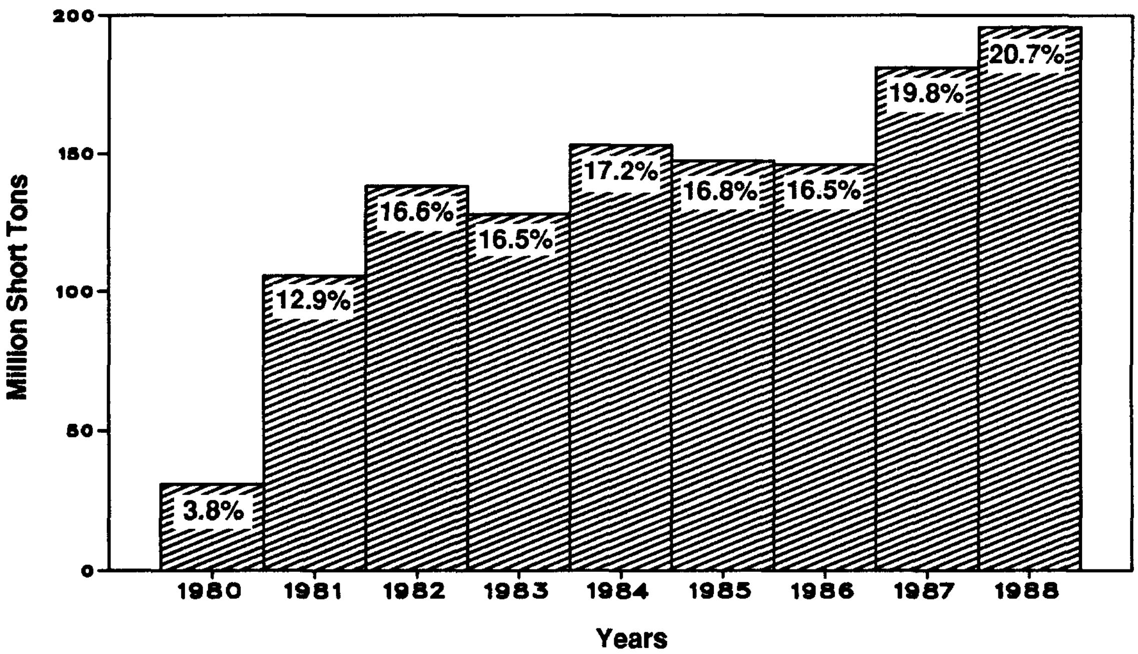
Sources: Coal ownership - Securities and Exchange Commission Form 13-D; *Moody's Industrial Manual, 1985-88*; U.S. Department of Commerce, International Trade Administration, *Foreign Direct Investment Activity in the United States*. Coal company production data - 1988: *Keystone News Bulletin* (Stamford, CT: Maclean Hunter Publishing Co., July, 1989). 1987: *Keystone News Bulletin* (Stamford, CT: Maclean Hunter Publishing Co., May 27, 1988). 1986: *1987 Keystone Coal Industry Manual* (New York: McGraw-Hill Inc., 1987). 1985: *1986 Keystone Coal Industry Manual* (New York: McGraw-Hill Inc., 1986). U.S. total for coal production - Energy Information Administration, *Quarterly Coal Report*, January-March 1989, DOE/EIA-0121(89/1Q) (Washington, DC, August 1989).

Table 13. Foreign Participation in U.S. Uranium Exploration and Development, 1976-1988

Year	Exploration and Development Expenditures by Foreign Companies	Total U.S. Exploration and Development Expenditures	Foreign Expenditures As Percent of U.S. Total	Number of Foreign-Affiliated Companies
	(million dollars)			
1976	13.2	170.7	7.7	15
1977	21.7	258.1	8.4	17
1978	39.3	314.3	12.5	31
1979	34.1	315.9	10.8	28
1980	37.6	267.0	14.1	28
1981	24.6	144.8	17.0	25
1982	14.6	73.6	19.8	14
1983	4.8	36.9	13.0	9
1984	6.6	26.5	24.9	9
1985	5.6	20.1	27.9	6
1986	12.0	22.1	54.4	8
1987	11.9	19.7	60.4	11
1988	8.9	20.2	44.0	11

Source: Energy Information Administration, *Uranium Industry Annual 1988*, DOE/EIA-0478(88) (Washington, DC, September 1989), pp. 11, 12.

Figure 4. Production and Share of U.S. Total Bituminous Coal and Lignite for Foreign-Affiliated U.S. Companies, 1980-1988



Sources: 1980: U.S. Department of Energy, *Annual Report to Congress*, Appendix A, DOE/S-0010(84) (Washington, DC, September 1984). 1981: Energy Information Administration, *Profiles of Foreign Direct Investment in U.S. Energy, 1983*, DOE/EIA-0466 (Washington, DC, February 1985). 1982-1988: *Keystone Coal Industry Manual*, 1983-1989 Editions. U.S. Totals: Energy Information Administration, *Quarterly Coal Report*, DOE/EIA-0121(89/1Q) (Washington, DC, August 1989).

The only FDI-related transaction in uranium operations reported in 1988 was the purchase by Rio Algom Ltd. of uranium properties from Kerr-McGee for $28.5 million. The properties included uranium reserves in Wyoming and Quivira Mining Company, a Kerr-McGee subsidiary with uranium mining operations in New Mexico.

4. Financial Profiles and Transactions of Foreign-Affiliated U.S. Energy Companies

As stated in Chapter 2 of this report, the measures of FDI and associated income published by the U.S. Department of Commerce are designed to conform with the international transactions accounts. These measures are not designed to gauge the performance of foreign-affiliated U.S. companies from a financial reporting perspective. In order to provide a financial performance perspective, comparisons of corporate financial indicators between foreign-affiliated U.S. energy companies and other U.S. energy companies are presented in the following section.[18] Aspects of corporate financial performance reported in this section include investment, growth, and profitability.

Profit and Investment Trends

In recent years, changes in refined product prices have lagged changes in crude oil prices, and refining margins (the difference between average refined product prices and crude oil acquisition costs) have increased. Crude oil prices declined throughout most of 1988 with the result that refining margins in 1988 were substantially above recent historical averages.[19] Higher margins and increased demand for refined products led to a substantial increase in U.S. refining and marketing profits. Energy companies with chemical operations further benefited from reduced raw material costs and strong demand. Coal operations also registered substantial rises in income due to strong demand and lower costs which offset slightly lower coal prices in 1988. Partially offsetting these improvements in financial results was a reduction in income from oil and gas production due to lower oil prices. For example, publicly-traded corporations classified as oil and gas producers, in total, registered net losses of $391 million in 1988 compared with net losses of $112 million in 1987.[20]

On balance, in 1988, energy companies' net income continued to recover from the low level of 1986, rising nearly 100 percent from 1987 (Table 14). Profitability of the energy companies, as measured by return on equity, nearly doubled from the prior year to 12.3 percent. However, their profitability remained below that of all U.S. manufacturing corporations although the gap narrowed in 1988 (Figure 5).

In 1988, net income rose from prior-year levels for both the foreign-affiliated energy companies and the energy industry comparison group. The foreign affiliates registered an 8-percent increase in net income to $5.3 billion in 1988 (Table 15). Other U.S. energy companies' net income increased by $11.7 billion, or 160 percent, from 1987 to 1988. The results for the latter group were strongly affected by Texaco's $4.9 billion after-tax charge against income in 1987 for restructuring and litigation. Excluding Texaco, net income of the U.S. energy comparison group increased by $6.3 billion, or by a still impressive 55 percent. Major petroleum companies, with their extensive operations in refining and chemicals, accounted for the bulk ($4.1 billion, excluding Texaco) of the improvement. Non-major U.S. refiners also registered a substantial, $2.4 billion, increase in net income from 1987 to 1988. Declines in oil and gas producers' net income slightly offset the improved financial results for the majors and the independent refiners. Profitability, as measured by return on equity, of the U.S. energy companies more than doubled between 1987 and 1988 and surpassed the profitability of the foreign-affiliated energy companies for only the second time in the 1980s (Figure 5).

Capital expenditures of both groups of companies rose in excess of 40 percent in 1988 (Table 15). To the extent that rising income serves as a harbinger of increased future profitability, capital spending apparently followed the upward path of income rather than falling

[18] The financial information presented in this section was drawn from the consolidated financial statements contained in Standard and Poor's Compustat II Industrial File. The U.S. energy industry comparison group is composed of companies other than the foreign-affiliated companies on the Compustat file that are classified under the four-digit Standard Industrial Classification (SIC) industry categories of crude oil and natural gas production (1311), petroleum refining (2911), oilfield services (1381, 1382, and 1389), and bituminous coal and lignite production (1220 and 1221), excluding companies that have been identified as foreign-affiliated, or companies whose operations are foreign-based or companies whose operations are already included in U.S. companies that have been identified as foreign-affiliated.

[19] Energy Information Administration, *Monthly Energy Review*, December 1988, DOE/EIA-0035(88/12) (Washington, DC, March 1989).

[20] Based on Compustat II Industrial File.

Table 14. Annual Change in Net Income and Return on Stockholders' Equity, 1986-1988
(Percent)

Industries	Percent Change in Net Income			Return on Stockholders' Equity [a]		
	1986	1987	1988	1986	1987	1988
U.S. Energy Companies[b]	-83.9	279.3	94.8	1.6	6.3	12.3
All U.S. Manufacturing Corporations	[c]-5.1	[c]39.1	[c,d]34.5	9.5	12.8	[d]16.2

[a]Net income as a percent of year-end stockholders' equity.

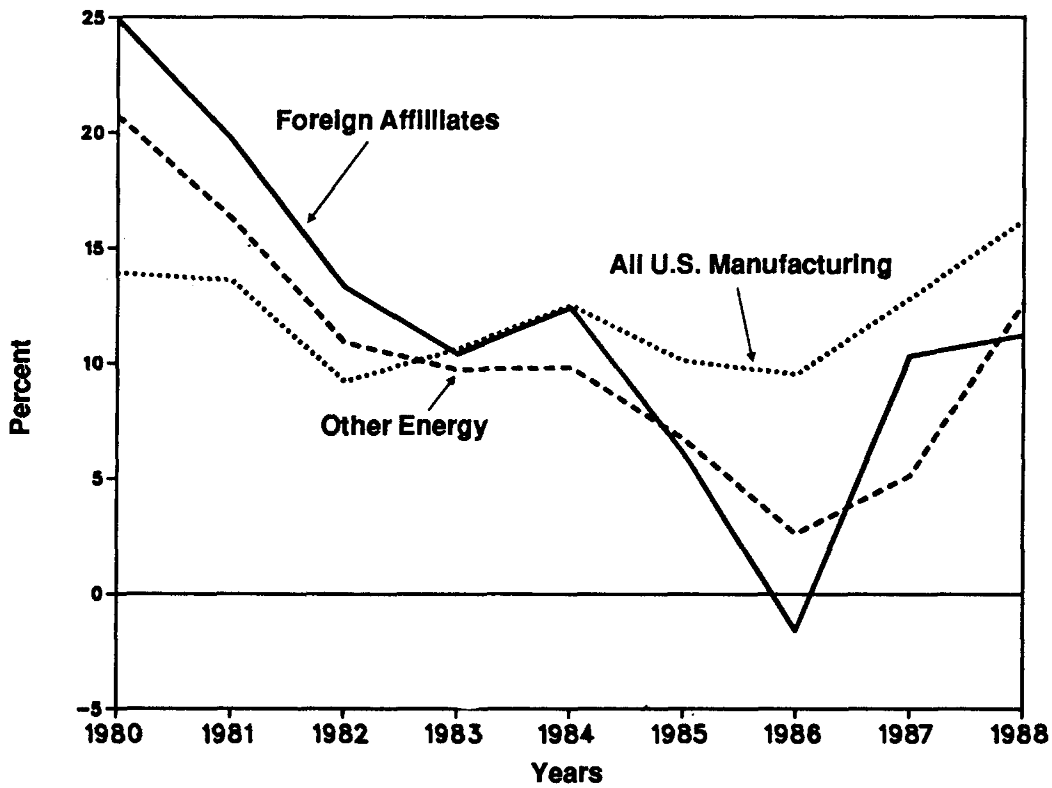
[b]Includes both groups of companies shown in Table 16.

[c]Percent change in corporate profits after income taxes.

[d]1988 figure is the annual average through the third quarter.

Source: Energy companies: Compustat II Industrial File. Corporate profits after income taxes for all U.S. manufacturing corporations and return on stockholders' equity for all U.S. manufacturing corporations: *Economic Report of the President January 1989*, p. 412.

Figure 5. Return on Equity for Foreign-Affiliated U.S. Energy Companies, Other Energy Companies, and All U.S. Manufacturing Corporations, 1980-1988.



Sources: Energy companies: Compustat II Industrial File and company annual reports. All U.S. manufacturing corporations: *Economic Report of the President, January 1989.*

Table 15. Selected Financial Information for Foreign-Affiliated U.S. Energy Companies, 1987 and 1988

Category	Foreign-Affiliated U.S. Energy Companies[a]			U.S. Energy Industry Comparison Group[b]		
	1987	1988	Percent Change	1987	1988	Percent Change
	(billion dollars)			(billion dollars)		
Financial Items						
Revenues	87.7	90.6	3.3	333.8	356.7	6.9
Net Income	4.9	5.3	8.2	7.3	19.0	160.3
Cash Flow[c]	12.9	13.5	4.7	44.7	45.9	2.7
Capital Outlays	8.4	11.9	41.7	28.1	39.6	40.9
Total Assets	111.4	108.9	-2.2	391.8	392.4	0.2
Financial Ratios	(percent)					
Return on Equity[d]	10.3	11.2		5.1	12.6	
Dividends/Net Income	93.1	65.7		149.2	62.3	
Dividends/Cash Flow	35.1	25.7		24.3	25.8	
Debt/Equity[e]	55.5	47.0		58.0	56.6	

[a]Includes incorporated U.S. energy companies which are foreign-affiliated and for which publicly reported financial information is available. Also included are foreign parent companies for which data for U.S. operations were not separately disclosed. For 1987 these companies were: Adobe Resources Corp., American Petrofina, Anadarko Petroleum Corp., Arabian Shield Development Co., Avalon Corp., Barret Resources Corp., Bengal Oil and Gas Corp., BP America Inc., Castle Energy Corp., Chieftain Development Co. Ltd., Daleco Resources Corp., DI Industries, Inc., DRX Inc., E.I. du Pont de Nemours and Company, Exploration Co., Gold King Consolidated Inc., Gulf Resources and Chemical Co., Hamilton Oil Corp., Harcor Energy Co., Harken Energy Corp., Inspiration Resources Corp., Inter-City Gas Corp., M.A. Hanna Co., MacMillan Ring-Free Oil Co., MSR Exploration Ltd., New London Inc. (formerly Kencope Energy Companies), Newmont Mining Corp., Oceanic Exploration Co., Panhandle Eastern Corp., Pauley Petroleum Inc., Petrotech Inc., Placer Dome Inc., Premier Resources Ltd., Pyro Energy Corp., Ranger Oil Ltd., Rio Algom Ltd., Schlumberger Ltd., Seagull Energy Corp., Shell Oil Co., Sunshine Mining Co., Taurus Petroleum Inc., Total Petroleum (North America), TransCanada Pipelines Ltd., Trinity Resources Ltd., Triton Energy Corp., Unimar Co., Valex Petroleum Inc., Westmoreland Coal Co., and Woodbine Petroleum Inc. In 1988, six additional companies are included, all of which were partly or wholly acquired by foreign entities during 1988. The additional companies are: Bellwether Exploration Co., Exploration Company of Louisiana, Presidio Oil Co., Santa Fe Natural Resources, Sunlite Inc., and U.S. Oil Co. For 1988, TransCanada Pipelines Ltd. was deleted due to the sale of their U.S. energy operations. All data for the companies were derived from the Compustat II Industrial File except the data for BP America which were obtained from annual reports.

[b]The comparison group is derived from aggregates available from the Compustat II Industrial File for the following four digit (SIC) industries: 1220 (bituminous coal, lignite mining), 1221 (bituminous coal, lignite surface mining), 1311 (crude petroleum and natural gas production), 1381 (oil and gas well drilling), 1382 (oil and gas field exploration), 1389 (oil and gas field services not elsewhere classified), and 2911 (petroleum refining). The Compustat aggregates are adjusted by subtracting out data for companies which have been identified as foreign-affiliated, or whose operations are foreign-based, or foreign-based companies whose U.S. operations are already included in U.S. companies identified as foreign-affilated.

[c]Measured as funds from operations.

[d]Defined as net income divided by year-end stockholders' equity.

[e]Defined as year-end long-term debt divided by year-end stockholders' equity.

Source: Compiled from Compustat II Industrial File and company annual reports.

in response to lower oil prices. Increases in capital expenditures were widespread among the foreign affiliates, with nearly two-thirds of the companies reporting higher capital expenditures in 1988. Acquisitions, mostly of proved oil and gas properties, accounted for about a third of the $3.5 billion increase in the foreign affiliates' capital expenditures. Although increases in capital expenditures were widespread among the 294 companies in the U.S. energy industry comparison group, major acquisitions accounted for the bulk of the $11.5 billion increase for this group. In particular, five companies (Amoco, Atlantic Richfield, Chevron, Mesa, and Mobil) expended $5.5 billion for the acquisition of Tenneco's petroleum assets, and Occidental Petroleum acquired Cain Chemical Company in a transaction valued at $2.2 billion in 1988.

Foreign Direct Investment Transactions in U.S. Energy Markets

Review of the composition of FDI-related transactions is useful for discerning trends and changes in the investment targets of foreign investors and the nature of the interest gained by foreign investors. This section presents a summary of equity acquisitions, mergers, joint ventures, lease acquisitions, and other transactions related to FDI activity in 1988. The transactions identified in this section were derived from a variety of public sources and do not necessarily reflect the confidential data submitted by foreign affiliates to the U.S. Department of Commerce, as reported in Chapter 2. However, the transactions reported in this section are taken from the most accurate information that is publicly available and should describe broad trends and developments in the composition of FDI in U.S. energy.[21]

Based on the information contained in the Appendix, the values of the 1988 FDI-related transactions were classified by industry and type of transaction. Petroleum dominated foreign investors' interest in U.S. energy in 1988. Petroleum's share of the value of FDI-related transactions increased from 81 percent in 1987 to 98 percent in 1988 (Table 16). The sharp decline in the share of total transaction values traceable to coal was the result of few coal-related transactions in 1988 and two large transactions in 1987. In 1988, Pyro Energy Company acquired Jim Smith Coal Company for $50 million and Peter Cundill and Associates, a Bermuda company, increased its equity interest in M.A. Hanna Company for $14 million. In 1987, Newmont Mining, which is 49.4-percent owned by Consolidated Gold Fields, a U.K. company, was involved in two coal-related transactions that totaled $1.9 billion in value. In the first transaction, Consolidated Gold Fields increased its ownership share in Newmont, from 26.3 percent to 49.4 percent for $1.6 billion, pursuant to fending off an attempted takeover of Newmont. In the other transaction, valued at $320 million, Newmont increased its ownership share in Peabody Holding Company, which ranks first in U.S. coal production, from 30.7 percent to 49.97 percent in 1987.

The composition of transactions in 1988 shifted away from stock/equity acquisitions. The share of stock/equity transactions declined from 92 percent of the value of FDI-related transactions in the energy industry in 1987 to 52 percent in 1988 (Table 17). British Petroleum's $7.8 billion acquisition of the minority interest in Standard Oil Company in 1987 was the primary source of the large share for equity acquisitions in that year. Despite the absence of any equity transactions approaching the value of the BP acquisition, a number of large equity acquisitions were made by foreign investors in 1988, including: Total Minatome's acquisition of CSX Oil and Gas Corporation for $612 million, BP America's acquisition of Lear Petroleum for $286 million, Gulf Canada Resources' acquisition of Home Petroleum Corporation for $191 million, Canadian Occidental Petroleum's acquisition of Moore McCormack Energy for $149 million, and Caspen Oil's acquisition of 71 percent of Summit

Table 16. Distribution of the Value of Foreign Direct Investment Transactions[a] by Industry, 1981-1988
(Percent)

Industry	1981	1982	1983	1984	1985	1986	1987	1988
Petroleum	79.6	60.3	87.8	77.2	99.1	91.5	81.3	98.4
Coal	20.2	32.4	11.3	19.7	0.9	7.6	18.7	1.1
Other	0.2	7.3	1.0	3.1	0.0	0.9	0.0	0.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[a]Excludes transactions for which dollar values were not reported.

Note: Total may not equal sum of components due to independent rounding.

Source: 1988: the percent distribution is based on Tables A1, A2, and A3 in the Appendix. 1981-1987: Energy Information Administration, *Profiles of Foreign Direct Investment in U.S. Energy 1987*, DOE/EIA-0466(87) (Washington, DC, December 1988).

[21]The identified FDI-related transactions for 1988 are listed in Tables A1, A2, and A3 in the Appendix, as are the information sources. Information for 1981 and 1982 FDI-related transactions is drawn from Appendix A of the U.S. Department of Energy, *Annual Report to Congress*, DOE/S-0010(83) (Washington, DC, September 1983), and Appendix A of U.S. Department of Energy, *Annual Report to Congress*, DOE/S0010(84) (Washington, DC, September 1984), respectively. The 1983 information appeared in Energy Information Administration, *Profiles of Foreign Direct Investment in U.S. Energy 1983*, DOE/EIA-0466 (Washington, DC, February 1985), 1984 information appeared in Energy Information Administration, *Profiles of Foreign Direct Investment in U.S. Energy 1984*, DOE/EIA-0466(84) (Washington, DC, December 1985), 1985 information appeared in Energy Information Administration, *Profiles of Foreign Direct Investment in U.S. Energy 1985*, DOE/EIA-0466(85) (Washington, DC, January 1987), 1986 information appeared in Energy Information Administration, *Profiles of Foreign Direct Investment in U.S. Energy 1986*, DOE/EIA-0466(86) (Washington, DC, December 1987), and 1987 information appeared in Energy Information Administration, *Profiles of Foreign Direct Investment in U.S. Energy*, DOE/EIA-0466(87) (Washington, DC, December 1988). It should be noted that because the information utilized in this section can only come from public sources, validation is not always possible. Nevertheless, the information presented in this section is useful for discerning broad trends in the composition of FDI-related transactions.

Table 17. Distribution of the Value of Foreign Direct Investment Transactions[a] by Type of Transaction, 1981-1988
(Percent)

Type of Transaction [b]	1981	1982	1983	1984	1985	1986	1987	1988
Stock/Equity Acquisition	74.1	58.2	16.9	61.5	49.1	57.6	91.8	51.8
Property or Lease Acquisition	16.7	10.6	55.7	31.6	29.2	24.2	4.4	19.8
Joint Venture	9.2	10.2	4.1	0.9	0.3	16.3	1.9	17.1
Other	(c)	21.0	23.4	6.0	21.4	1.9	1.9	11.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[a]Excludes transactions for which dollar values were not reported.

[b]Stock/equity acquisitions include purchases of common stock and purchases of subsidiary companies of U.S. corporations. Property or lease acquisitions include purchase of producing energy properties and acquisitions of leases from Federal and State governments. Joint ventures include the value of a foreign entity's share in a joint venture in the United States. Other transactions largely consist of plant expansions, long-term supply contracts, and purchase of existing plant and equipment.

[c]Less than 0.05 percent.

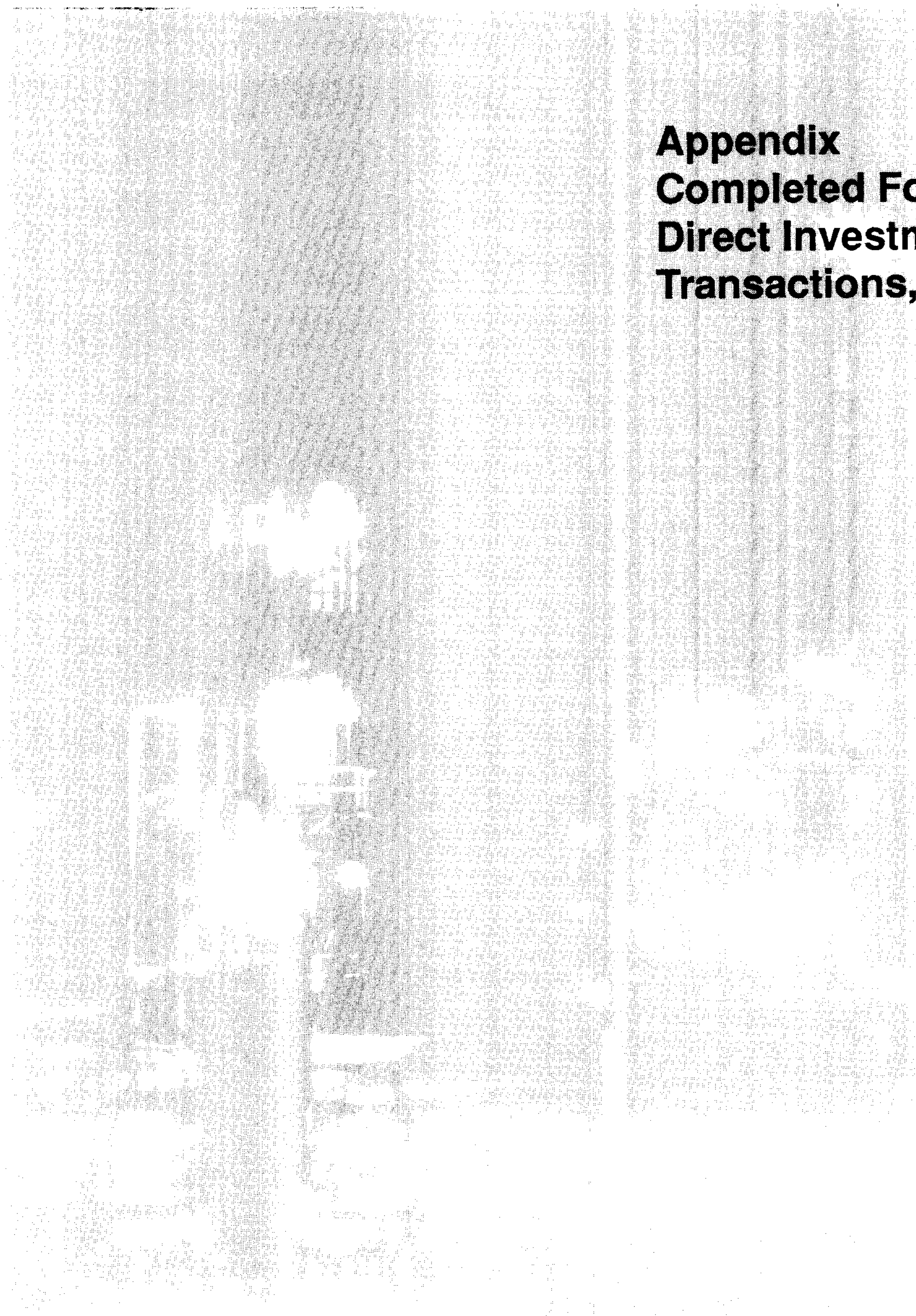
Note: Total may not equal sum of components due to independent rounding.

Source: 1988: the percent distribution is based on Tables A1, A2, and A3 in the Appendix. 1981-1987: Energy Information Administration, *Profiles of Foreign Direct Investment in U.S. Energy 1987*, DOE/EIA-0466(87) (Washington, DC, December 1988).

Energy's common stock in a transaction valued at $149 million. Over the 1981 through 1986 period, property and lease acquisitions averaged 28 percent as a share of the value of FDI-related transactions in the energy industry. In 1987, although expenditures for properties and leases were essentially unchanged from the prior year, the share fell to 4 percent due to the large size of the British Petroleum equity acquisition. In 1988, the value of FDI-related transactions related to energy properties and leases increased from $446 million in 1987 to $1.1 billion in 1988. The largest transactions in this category were American Petrofina's purchase of Tenneco's U.S. onshore oil and gas properties located in the Southwest and Gulf States regions for $600 million and Shell Oil's acquisition of Federal oil and gas leases in the Chukchi Sea, Alaska, for $271 million.

The large increase in the share of FDI-related transactions attributable to joint ventures, from 2 percent in 1987 to 17 percent in 1988 (Table 17) reflected the formation of Star Enterprise. Star Enterprise is a 50-50 joint venture between Aramco of Saudi Arabia and Texaco, involving three U.S. refineries (615,000 barrels per calendar day of capacity) and over 12,000 Texaco branded gasoline marketing outlets. Texaco valued the transaction at $812 million. Pacific Rim investors continued to form joint drilling ventures in the United States in 1988: Japex entered into a joint venture with Tenneco valued at $27 million and Lucky-Goldstar International, a South Korean company, contributed $20 million to a joint drilling venture with Chevron. In 1987, Nippon Oil Company and Chevron became partners in a joint drilling venture valued at $100 million, and, in 1986, a similar venture was formed between Nippon Mining Company and Du Pont's Conoco unit.

The remaining category shown in Table 17, "other," includes purchases of existing plant and equipment. Purchases of U.S. refining facilities accounted for most of the increase in the share of the value of FDI-related transactions in this category. Ultramar, a U.K. company, paid $440 million for Union Pacific's Wilmington, California, refinery and BP America purchased Mobil's Ferndale, Washington, refinery and interest in Olympic Pipeline Company for $152.5 million in 1988.



Appendix
Completed Foreign Direct Investment Transactions, 1988

Table A1. Completed Transactions by Size in the Petroleum Industry from January 1988 through December 1988

Acquiring Company	Acquiring Company Activity	Affected Company	Affected Company Activity	Type of Transaction	Size of Transaction	Date of Transaction
					(million dollars)	
ARAMCO (Saudi Arabia)	National oil company	Texaco, Inc. (NY)	Oil & gas exploration and production	Joint venture	812	Dec. 88
Horsham Corporation (Canada) ADC Acquisition Corp.	Investment holdings	Clark Oil & Refining Co.	Petroleum refining	Equity acquisition	650	Sept. 88
Total Compagnie Francaise des Petroles (France) Total Minatome Corp.	Integrated petroleum operations	CSX Oil & Gas CORP. (VA)	Oil & gas exploration and production	Merger	612	Apr. 88
Petrofina S.A. (Belgium) Amer. Petrofina Inc.	Integrated petroleum operations	Tenneco Inc. (TX)	Oil & gas exploration and production	Property acquisition	600	Nov. 88
Ultramar PLC (United Kingdom)	Integrated petroleum operations	Union Pacific Corp. (PA)	Transportation, oil & gas, coal	Refinery acquisition	440	Dec. 88
British Petroleum PLC (United Kingdom) BP America, Inc.	Integrated petroleum operations	Lear Petroleum Corp.(TX)	Oil & gas exploration and production	Merger	286	Sept. 88
Royal Dutch/Shell Group (Netherlands) Shell Western E&P Inc.	Integrated petroleum operations	NA	NA	Federal lease acquisition	271	May 88
Olympia & York Ltd. (Canada)	Real estate, Investment holdings	Santa Fe Southern Pacific, Inc. (IL)	Transportation, oil & gas exploration and production	Equity acquisition	236	Jul. 88
Gulf Canada Resources Ltd. (Canada)	Oil & gas exploration and development	Home petroleum Corp. (CO)	Oil & gas exploration and production	Merger	191	Dec.88
British Petroleum PLC (United Kingdom) Sohio Oil Co.	Integrated petroleum operations	Mobil Oil Corp. (VA)	Integrated petroleum operations	Refinery acqusition	152.5	Dec. 88
Caspen Oil PLC (United Kingdom)	Oil & gas exploration and development	Summit Energy Inc. (TX)	Oil & gas exploration and production	Equity acquisition	149	May 88
Canadian Occidental Petroleum LTD (Canada) Canadian Oxy Production Co.	Oil & gas exploration and development	Moore McCormack Energy Inc. (TX)	Oil & gas exploration and production	Equity acquisition	148.75	May 88
Broken Hill Proprietary Co. Ltd (Australia) Tejas Gas Corp.	Diversified energy, mining manufacturing	Gulf Energy Development Corp.	Oil & gas exploration and production	Equity acquisition	140	Sept. 88
Bridge Oil Co. Ltd. (Australia) Bridge Oil Co.	Oil & gas exploration and development	Petrus Oil & Gas LP. (TX)	Oil & gas exploration and production	Equity acquisition	112	Dec. 88
Electra Investment Trust PLC (United Kingdom) Presidio Oil Co.	Oil & gas exploration and development	General Atlantic Energy Corp.	Oil & gas exploration and production	Equity acquisition	100.8	Dec. 88
Placer Dome Ltd. (Canada) Praire Producing Co.	Oil & gas exploration and development	Unidentified investors	NA	Joint venture	100	Aug. 88

Table A1. Completed Transactions by Size in the Petroleum Industry from January 1988 through December 1988 (Continued)

Acquiring Company	Acquiring Company Activity	Affected Company	Affected Company Activity	Type of Transaction	Size of Transaction	Date of Transaction
					(million dollars)	
Society Nationale Elf Acquitaine (France) Elf Acquitaine Petroleum	Natural resources, petrochemicals	Roy M. Huffington Inc. (TX)	Oil & gas exploration and production	Property acquisition	60	Oct. 88
Petroleos De Venezuela S.A. (Venezuela)	National petroleum company	Champlain Refining Co. (TX)	Petroleum refining	Equity acquisition	75	Oct. 88
Burmah Oil PLC (United Kingdom) Castrol Inc.	Refining, petroleum products distribution	Chem-Trend Inc. (MI)	Specialty Lubricants	Merger	46	Nov. 88
Traco International N.V. (Netherlands) Harken Energy Corp.	Oil & gas exploration and development	Shar-Alan Oil Co. (CO)	Oil & gas exploration and production	Equity acquisition	45	Dec. 88
Electra Investment Trust PLC (United Kingdom) Presidio Oil Co.	Oil & gas exploration and development	King Ranch Oil & Gas Inc.	Oil & gas exploration and production	Property acquisition	39.4	Nov. 88
Minerals & Resources Ltd. (Bermuda) Hill Petroleum Co.	Natural Resources	Texas City Refining Inc. (TX)	Petroleum refining	Asset acquisition	35	Aug.88
Kuwait Investment Office (Kuwait)	National investment agency	Exploration Co. of Louisiana (LA)	Oil & gas exploration and production	Equity acquisition	28.6	Jan. 88
Japan Petroleum Exploration Co.ltd. (Japan) Japex Gulf of Mexico Corp.	Oil & gas exploration and development	Tenneco Oil Exploration and Production (TX)	Natural gas, chemicals	Joint venture	27	Jul.88
Royal Dutch/ Shell Group(Netherlands) Shell Oil Co.	Oil & gas exploration and development	NA	NA	Lease acquisition	24.8	Mar. 88
Royal Dutch/ Shell Group(Netherlands) Shell Western E&P, Inc.	Integrated petroleum operations	NA	NA	Federal Lease acquisition	24	Oct. 88
Petrofina S.A. (Belgium) Fina Oil & Chemicals	Integrated petroleum operatifons	Tenneco Oil Co. (TX)	Oil & gas exploration and production	Property acquisition	20	Aug. 88
Lucky- Goldstar International Corp. (South Korea)	Diversified export-import	Chevron U.S.A. Inc. (CA)	Oil & gas exploration and production	Joint venture	20	Mar. 88
Industrial Equity Ltd. (Australia) Seagull Energy Corp.	Oil & gas exploration and development	Houston Oil & Minerals Corp. (TX)	Oil & gas exploration and production	Property acquisition	18	Nov. 88
International Petroleum Investment Partners (Algeria) Anadarko Petroleum	Oil & gas exploration and development	Shell Western E & P Inc. (TX)	Oil & gas exploration and production	Property acquisition	14.9	Dec. 88
Traco International N.V.(Netherlands) Harken Energy Corp.	Oil & gas exploration and development	Allen's Convenience Stores Inc. (TX)	Retailing, petroleum marketing	Asset acquisition	10	Dec. 88

Table A1. Completed Transactions by Size in the Petroleum Industry from January 1988 through December 1988 (Continued)

Acquiring Company	Acquiring Company Activity	Affected Company	Affected Company Activity	Type of Transaction	Size of Transaction	Date of Transaction
					(million dollars)	
Lysander Petroleum PLC (United Kingdom)	Oil & gas exploration & development	Crossroads Oil Co.	Drilling ventures	Merger	8	May 88
Broken Hill Proprietary Co.ltd. (Australia) Hamilton Oil Corp.	Diversified energy, mining, manufacturing	Falcon Pipeline System	Gas pipeline	Equity acquisition	5.6	Jun. 88
British Petroleum PLC (United Kingdom) BP America Inc.	Integrated petroleum operations	Chevron Corp. (CA)	Oil & gas exploration and production	Joint venture	4.9	Sept. 88
Ranger Oil Co. Ltd. (Canada)	Oil & gas exploration and development	NA	NA	Federal lease acquisition	4.7	Sept. 88
British Petroleum PLC (United Kingdom) Standard Alaska Production Co.	Integrated petroleum operations	NA	NA	Federal lease acquisition	4.3	Sept. 88
Traco International N.V(Netherlands) Harken Energy Corp.	Oil & gas exploration and development	Crystal Oil Co. (LA)	Oil & gas exploration and production	Equity acquisition	4	Dec. 88
United Guarantee PLC (United Kingdom)	Investment holdings	Adena Corp. (NY)	Oil & gas exploration and production	Merger	4	May 88
Industrial Engineering Ltd. (Australia)	Investment holdings	Triton Energy Corp. (TX)	Oil & gas exploration and production	Equity acquisition	3.5	May 88
Lonrho PLC (United Kingdom) Pauley Petroleum Inc.	Oil & gas exploration and development	Fletcher Oil & Refining Co. (CA)	Petroleum refining	Merger	3	Oct. 88
International Petroleum Investment Partners (Algeria) Anadarko Petroleum	Oil & gas exploration and development	NA	NA	Federal lease acquisition	3	Dec. 88
Cornwall Petroleum Corp. N.L. (Australia) HarCor Energy Inc.	Oil & gas exploration and development	HBH Energy Inc. (TX)	Oil & gas exploration production	Merger	2.1	Oct. 88
Oakville N.V. (Hong Kong)	Investment holdings	Tesoro Petroleum Corp. (TX)	Oil & gas exploration and production	Equity acquisition	1.75	Sept. 88
Cornwall Petroleum Corp. N.L. (Australia) Cornwall Petroleum Hlds. Inc.	Oil and gas exploration and development	Taurus Petroleum Inc. (CO)	Oil and gas exploration and production	Equity acquisition	1.2	July 88
Alfred Steinbrugger (Liechtenstein)	Investor	Gold King Consolidated Inc. (CO)	Oil and gas exploration, field services	Equity acquisition	0.9	Mar. 88
Traco International N.V.(Netherlands)	Investment holdings	Harken Energy Corp.(TX)	Oil & gas exploration and production	Equity acquisition	0.9	Feb. 88
British Petroleum PLC(United Kingdom) Sohio Petroleum Co.	Integrated petroleum operations	Presidio Oil Co. (CO)	Oil & gas exploration and production	Equity acquisition	NA	Oct. 88

Table A1. Completed Transactions by Size in the Petroleum Industry from January 1988 through December 1988 (Continued)

Acquiring Company	Acquiring Company Activity	Affected Company	Affected Company Activity	Type of Transaction	Size of Transaction	Date of Transaction
					(million dollars)	
Alexandra Mining Co. (Bermuda)	Investment holdings	DRX Inc. (CO)	Oil & gas exploration and production	Equity acquisition	NA	Feb. 88
IBM United Kingdom Pensions Trust Ltd. (United Kingdom)	Pension Fund	Bellweather Exploration Co. (TX)	Oil & gas exploration and production	Equity acquisition	NA	Jan. 88
Charterhall PLC (United Kingdom) Charterhall Amer. Inc.	Investment holdings	Brannigan Resources production	Oil & gas exploration &	Asset acquisition	NA	Nov. 88
Electra Investment Trust PLC (United Kingdom)	Investment holdings	Presidio Oil (CO)	Oil and gas exploration and production	Equity acquisition	NA	Jan. 88
Vittorio Di Guevara Fabbri (Italy)	Investor	United States Oil Co.(NY)	Oil & gas exploration and production	Equity acquisition	NA	Apr. 88
Seagrams Co. Ltd. (Canada) Conoco, Inc.	Investment, distilling, energy	Phillips Petroleum (OK)	Oil & gas exploration and production	asset acquisition	NA	Oct. 88
Vittorio Di Guevara Fabbri (Italy) United States Oil Co.	Oil & gas exploration and development	Har-Ken Oil Co./ Crescent Drilling	Oil & gas explor. & production. pipeline operation	asset acquisition	NA	Nov. 88
Channel Hotels & Properties Ltd. (United Kingdom)	Real estate developer	Sunlite Inc. (GA)	Oil & gas exploration and production, real estate	Equity acquisition	NA	Sept. 88
Vitol Beheer B.V.(Netherlands) Barrett Resources Corp.	Oil & gas exploration and development	Mobil Oil Corp. (VA)	Integrated petroleum operations	Lease acquisition	NA	Sept. 88
Claremont Petroleum N.L. (Australia) Claremont Petroleum Inc.	Oil & gas exploration and development	Woodbine Petroleum (TX)	Oil & gas exploration and production	Equity acquisition	NA	Apr. 88
Northgate Exploration Ltd. (Canada)	Mineral resource exploration & production.	Oilsearch Corp. (NM)	Oil & gas exploration and production	Equity acquisition	NA	Apr. 88
TMOC Resources Ltd. (Australia) Avalon Corporation	Real estate, oil & gas explor. & prod.	NA	NA	Lease acquisition	NA	Jun. 88
Nippon Oil Co. (Japan)	Integrated petroleum operations	Texaco Inc. (NY)	Integrated petroleum operations	Joint venture	NA	Nov. 88
Petrocorp Exploration Ltd. (New Zealand)	Oil & gas exploration and production	Northern Michigan Exploration Co.	Oil & gas exploration and production	Joint venture	NA	July 88
Sinochem (China)	Diversified operations	Coastal Corporation (TX)	Oil & gas exploration and production	Joint venture	NA	Oct. 88

NA = Not available

Source: See last page of the Appendix.

Table A2. Completed Transactions by Size in the Coal Industry from January 1988 through December 1988

Acquiring Company	Acquiring Company Activity	Affected Company	Affected Company Activity	Type of Transaction	Size of Transaction (million dollars)	Date of Transaction
Costain Group PLC (United Kingdom) Pyro Energy Corp.	Engineering, mining	Jim Smith Coal Co. (KY)	Coal mining	Merger	50	Apr. 88
Elders Resources Nzfp Ltd (Australia) Elders Resources N.A.	Natural resources	Western Pocahontas Coal Properties L.P.	Coal mining	Equity acquisition	NA	Nov. 88
Peter Cundill & Associates (Bermuda) Ltd Peter Cundill & Assoc. Inc.	Investment holdings	M.A. Hanna Co.	Coal mining	Equity acquisition	13.8	July 88

NA = Not available

Source: See last page of the Appendix.

Table A3. Completed Transactions by Size in Other Energy Industries from January 1988 through December 1988

Acquiring Company	Acquiring Company Activity	Affected Company	Affected Company Activity	Type of Transaction	Size of Transaction (million dollars)	Date of Transaction
RTZ Corp. (United Kingdom) Rio Algom Ltd.	Mining, specialty steel	Quivira Mining Co. (NM)	Uranium mining	Asset acquisition	28.5	Nov. 88

Source: See last page of the Appendix.

Sources

Sources used in compiling the information presented in Tables A1, A2, and A3 include:

- *The Wall Street Journal.* Various issues for 1988 and 1989
- *Business Week.* Various issues.
- Company financial reports: annual reports to stockholders, annual reports on Securities and Exchange Commission (SEC) Form 10-K, and filings on SEC Schedule 13-D.
- *Moody's International Manual,* 1988 and 1989. Moody's Investors Service, New York, NY.
- *Oil and Gas Journal.* Pennwell Publishing Company, Tulsa, OK. Various issues, 1988 and 1989.
- U.S. Securities and Exchange Commision, *SEC News Digest,* Washington, DC. Seclected issues, 1988 and 1989.
- *Predicasts FS Index of Corporate Change,* 1988. Predicasts, Inc., Cleveland, OH.
- U.S. Department of Commerce, International Trade Administration, *1988 Foreign Investments* (Final Printout), Washington, DC.
- *Mergers and Corporate Policy: The Cambridge Report on Corporate Policy.* Cambridge Corporation. Ipswich, MA. 1988 and 1989.
- *Petroleum Supply Annual 1988.* Energy Information Administration, Washington, DC.
- *Oil and Gas Investor,* Hart Publication Inc., Denver, CO., April 1989.
- *U.S. Oil Week,* Capitol Publishing Group, Alexandira, VA. Various issues.
- Company Press releases.
- *Keystone News Bulletin,* Mining Information Services a unit of Maclean Hunter, Stamford, CT. Various issues, 1988 and 1989.
- *Coal,* Maclean Hunter Publishing Co., Chicago, IL. Various issues.

Government Books FOR YOU

Take advantage of the wealth of knowledge available from your Government. The Superintendent of Documents produces a catalog that tells you about new and popular books sold by the Government. Hundreds of books on agriculture, business, children, energy, health, history, space, and much, much more. For a free copy of this catalog, write—

Free Catalog
P.O. Box 37000
Washington, DC 20013–7000

Energy Information Administration
U.S. Department of Energy
Forrestal Building, EI-231
Washington, DC 20585

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, $300

Return Postage Guaranteed

THIRD-CLASS MAIL
POSTAGE & FEES PAID
U.S. DEPT. OF ENERGY
PERMIT NO. G-20

DEPARTMENT OF ENERGY · UNITED STATES OF AMERICA